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POVERTY REDUCTION BY INCREASING  
THE COMPETITIVENESS OF ENTERPRISES



# QUARTERLY PROGRESS REPORT

**POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS  
OF ENTERPRISES (PRICE)  
JANUARY 1, 2011- MARCH 31, 2011**

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**January 1, 2011- March 31, 2011**

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## ACRONYMS AND ABBREVIATIONS

BADC	Bangladesh Agriculture Development Corporation
BARI	Bangladesh Agriculture Research Institute
BCLET	Bangladesh College of Leather and Engineering Technology
BDT	Bangladeshi taka (currency)
BFFEA	Bangladesh Frozen Food Exporter Association
BFLLFEA	Bangladesh Finished Leather, Leather goods and Footwear Exporters Association
BFRI	Bangladesh Fisheries Research Institute
BFVEA	Bangladesh Federation of Vegetables Exporters Association
BLSC	Bangladesh Leather Service Center
BPC	Business Promotion Council
BSFB	Brinjal shoot and fruit borer
BSFF	Bangladesh Shrimp and Fish Foundation
BTA	Bangladesh Tanners Association
CCM	Cold chain management
DAE	Department of Agricultural Extension
DCA	Development Credit Authority
DOF	Department of Fisheries
EPB	Export Promotion Bureau
FPBPC	Fisheries Product Business Promotion Council
FIQC	Fish Inspection and Quality Control Lab (DOF)
FY	Fiscal year
GDA	Global Development Alliance
GHERS	Greater Harvest and Economic Return from Shrimp project
GOB	Government of Bangladesh
HACCP	Hazard Analysis and Critical Control Points
IPM	Integrated pest management
ITC	International Trade Center
ISO	International Organization for Standardization
LCDF	Local Currency Development Fund
LGFMEA	Leather Goods & Footwear Manufacturers & Exporters Association
LSBPC	Leather Sector Business Promotion Council
M&E	Monitoring and evaluation
MOC	Ministry of Commerce
MOF	Ministry of Fisheries
MOU	Memorandum of Understanding
NGO	Non-government organization
PHH	Post-harvest handling
PL	Post-larvae (shrimp)
SME	Small and medium enterprise
STTA	Short-term technical assistance
TOT	Training of trainers
WFC	WorldFish Center

## Executive Summary

In January through March 2011, PRICE continued to build on its activities in all three sectors – horticulture, aquaculture, and leather products.

In the horticulture sector, PRICE focused its activities largely on potato because January and part of February make up the critical growing period for potato. PRICE helped its partners grow clean potato seeds from the pre-breeder and breeder seeds in net houses, which will significantly reduce Bangladesh's dependency on imported seeds. PRICE also introduced the processing type of potatoes among farmers, facilitated the organization of residential training courses to strengthen existing tissue culture labs and created a pool of qualified tissue culture technicians. Since mango plants started blooming in February, PRICE supported its partners to organize farmer trainings on orchard management and provided technical support to maximize the yield. PRICE helped its eggplant farmers source seeds from Bangladesh Agriculture Development Corporation (BADC) and other reputable companies. In addition to sourcing seeds, PRICE supported training on different production techniques starting from seedling raising, soil testing, use of lime, compost and other fertilizers, transplanting of healthy plants, adopting a mix of improved pest management techniques, and the establishment of demonstration plots and market linkages.

In the horticulture sector, PRICE encouraged smallholder farmers to grow pesticide-free vegetables in dykes, and promoted the use of Tricho and Vermi Compost for sustainable horticultural crop production. The major highlight of the quarter is PRICE's market linkage initiative that resulted in the first deal ever for the export of 300 metric tons of quality potatoes to the Malaysian subsidiary of the British retail giant, TESCO.

As a result of PRICE interventions this quarter, the horticulture sector partners increased their sales by more than \$2.9 million, created 2,190 jobs across the value chain, and increased their investment in fixed assets by approximately \$103 thousand. In addition, a total of 3,056 farmers were trained on improved technology. In this quarter, PRICE facilitated access to micro credit for 2,700 farmers.

In the aquaculture sector, PRICE linked fish farmers to quality seed-producing hatcheries and nurseries, and facilitated trainings on farm management for different fish species, from pond preparation to harvesting and marketing. Since this quarter represents the beginning of farming preparations for micro, small and medium fish farmers, most management related trainings were conducted during this reporting period. PRICE also signed memoranda of understanding (MOU) with an enterprise-based commercial feed miller, a farming association, aquaculture input sellers, and exporters of value-added fish. In addition, although January through March is not the peak season for shrimp farming and yields, it is important to ensure a strong supply of disease-free and traceable post-larvae (PL) prior to stocking. Therefore, PRICE continued assisting private testing labs to build their capacity to increase supplies of screened PL. As an initiative for value-added product (VAP) development, PRICE collaborated with USAID funded and Winrock International managed "Farmer to Farmer" program to utilize support from a high profile US consultant for its partner processing plants to assist their capacity buildup for value-added product development and to quantify the status and potential of manufacturing value added products by them. Under the Greater Harvest and Economic Return from Shrimp (GHERS) project, PRICE promoted

improved farming practices and a market for virus-free, screened PL. PRICE supported its shrimp processing partners' attendance at the Gulf Food Fair in Dubai. One of the major outcomes of attending the fair was the establishment of linkages with foreign buyers, especially in untapped and newly emerging sea food markets in Middle Eastern countries.

Project activities during this quarter in the aqua sector led to additional sales of nearly \$23.3 million, the creation of over 3,837 jobs across the value chains, and about \$772 thousand in new investments.

In the leather sector, the main focus of this reporting period was on small and medium-sized enterprises (SME). PRICE mainly focused on SME footwear and goods producers by helping them develop new business linkages and build their institutional capacity in the areas of technology, management, and compliance. At the same time, PRICE's commitment to support the sector in addressing the shortage of skilled workers continued. PRICE facilitated an initiative to disseminate and share the information learned through the pilot "process upgradation" program with various stakeholders, particularly SMEs of the sector. For instance, PRICE organized a seminar called "Experience Sharing Seminar on Better Production Technique in SMEs of Leather Products Sector." The leather products sector also signed an MOU with the Center of Excellence for Leather (COEL), launching an industry initiative to create a one-stop service center for workforce development in the sector.

Leather sector partners increased their sales by \$5.3 million, generated 693 new (full time equivalent ) jobs and made \$100,000 new investment this quarter and. A total of 770 workers were trained in workforce development programs.

In total, the sales of PRICE-assisted SMEs and farmers increased by \$31.5 million during the quarter. As a result of PRICE interventions, almost 6,719 new jobs were created across the value chains, private sector investment grew by more than \$976 thousand, and 3,041 farmers and SMEs gained access to finance. PRICE emphasized a great deal on training, with more than 4,958 mostly horticulture and aquaculture farmers receiving assistance to improve their management practices, and over 4,382 receiving different types of technical training. Over 2,042 people participated in workforce development programs during the period, most of them in the aquaculture and leather products sector.

<b>PRICE PERFORMANCE Jan-Mar 2011</b>	
<b>INDICATOR</b>	<b>ACHIEVED</b>
<i>Sales increased</i>	\$31.5 million
<i>New jobs created</i>	6,719
<i>Investment increased</i>	\$976 thousand
<i>Farmers/SMEs trained in technology</i>	4,382
<i>Farmers/SMEs trained in management</i>	4,958
<i>Farmers/SMEs got access to finance</i>	3,041
<i>Workforce development training</i>	2,042



## QUARTERLY HIGHLIGHTS

- PRICE helped its partners grow clean potato seeds of Cardinal, Diamant and Granola, three major table potato varieties grown by Bangladeshi farmers from the pre-breeder seeds and breeder seeds. These seeds are grown under strict isolation in net houses, and will reduce dependency on imported seeds.
- PRICE introduced processing types of potatoes among farmers linked with Gram Unnayan Kendra Enterprise Development (GUKED) and Murail Cooperative Society so that existing companies can obtain sufficient quantities of processing types of potatoes from one of the potato hubs in the country.
- PRICE organized a two-week long residential training course to strengthen the existing potato tissue culture labs and to create a pool of qualified tissue culture technicians in the sector.
- PRICE supported Muktir Alo Agro Enterprise to organize four trainings consisting of 30 farmers in each group, on “Improved Technology on Eggplant Cultivation through Contract Farming.”
- Working intensely with a group of 1,500 Gram Unnayan Kendra Enterprise Development (GUKED) contract farmers and Golden Harvest Agro Industries, PRICE helped to successfully close the first deal ever for the export of 300 metric tons of quality potatoes to the Malaysian subsidiary of the British retail giant, TESCO.
- The U.S. Ambassador to Bangladesh and the USAID/Bangladesh Mission Director visited a site of integrated farming under the GHERS initiative. They highly praised PRICE-supported farmers’ efforts to convert a single crop of rice in wet season in a saline zone, to diverse crops of rice, fish, shrimp and embankment vegetables in different seasons, by trapping rain water with the help of embankments and canals. This initiative has lead to higher income, improved family nutrition and food security.

	<ul style="list-style-type: none"> <li>• Seven new value added products were developed and evaluated by a 10-member testing panel in two shrimp and fish processing plants. The test results were good and the new items can be produced with the existing machines.</li> <li>• PRICE arranged 14 in-country study trips among PRICE aquaculture partners. As a result of observing high-density mono and mixed farming techniques with sinking and floating dry pellet in the Mymensingh region, two beneficiaries have copied these techniques and initiated the farming of exotic climbing perch and local stinging catfish in the Narail area.</li> <li>• Nine representatives from five processing plant partners participated in the Gulf Food Fair, and one partner received an export order for frozen shrimp worth USD 500,000.</li> <li>• The final report of a market study on two exotic farming species, tilapia and pangas (Mekong river catfish) came out. The report reveals the success of commercial high yielding pangas and tilapia farming using dry pellet may become a key for other commercial farmers currently using diverse type of supplementary feeds and also using other species of farmed fish to use dry pellets. The government is planning to increase fish production in the country and, assuming that water body under farming is not increasing, dry pellet feed production needs to be increased. Therefore, more investment in feed industry is likely. The planners and investors are likely to benefit from the study results.</li> <li>• PRICE organized an experience-sharing seminar with over 50 leather sector SMEs on “Better Production Techniques.”</li> <li>• An MOU was signed between PRICE and the Center of Excellence for Leather (COEL), launching an industry initiative that will create a one-stop service center for workforce development in the leather products sector.</li> </ul>
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## HORTICULTURE SECTOR

January and part of February are the critical growing period for potato, mainly due to cooler temperatures. Although March is the main harvesting season, young potato arrives to the market much earlier for better prices. This year, like the previous year, farmers aimed to plant potatoes on a large scale planting because of the affordability of fertilizer and because they have better access to seeds. Planting more potatoes also ensures their families' food security due to high price of rice. As a result, low market prices didn't influence planting. The government set an all-time record high target of producing 8.4 million MT of potato from 480, 000 hectares of land during the current year compared to last year's bumper yield of 8.1 million MT. According to preliminary field estimates this year, the area under potato cultivation increased slightly from 425,000 hectares and the total yield is expected to be around 8 million MT or more.

Potato growers across the country, however, faced challenging weather conditions that impacted their yields. Farmers who planted early had to repeat sowing due to sudden rains immediately after sowing, which resulted in low yields. In addition, delayed planting, the sudden drop in temperatures immediately after sowing, poor germination, and a short growing season contributed to poor yields in some areas. Fortunately, many potato contract farmers linked with PRICE partners planted at the right time, had access to good quality foundation/certified seeds and followed better management practices produced bumper crops; some farmers harvested even up to 15 -16 MT of potatoes compared to 7-8 MT from an acre of land. Clean seeds from the tissue culture labs played a vital role in contributing to increased yields.

Mango plants have been blooming since February. Overall, blooming conditions and fruit settings are good and this year's mango yields are expected to be better than last year's due to favorable climate conditions. PRICE supported its partners in organizing farmer trainings on orchard management, and providing technical support for maximizing the yield potential.

Egg plant harvest started from early March. This will continue for the next three months. Overall crop condition is good. In some areas farmers started their harvest in February. Thanks to the unusual late rain just before the last cool season which has prompted farmers to start transplanting in the 3rd week of November immediately after harvesting rice. Transplantation of young eggplant seedlings from the seed bed to the main field was very successful and so the crop growth.

PRICE helped its farmers in sourcing good quality seeds, selecting better local varieties, facilitated in providing training on different production techniques; starting from seedling raising techniques, transplantation, adoption of a mix of biological and chemical control measures against pests and diseases, and establishment of demonstration plots. Safe eggplant production, minimize cost of production and market linkages were main the focus of interventions.

### A. POTATO

PRICE helped several local companies produce clean seeds to decrease their dependence on imported seed, as well as locally produced low quality seeds. Historically Bangladesh started producing European varieties of potato mainly by importing seeds from the Netherlands as well as from second/third generation seeds produced locally from the elite / certified

imported seeds. However, seeds produced locally along with imported seeds could only meet about 5-10% of the demand, which continues to grow.

Initially local seed production was done by a government agency but lately some local seed producers came forward. Konica Seed Company Limited, a PRICE supported company, is one of those. But their quality was compromised due to use of locally multiplied 3<sup>rd</sup>/4<sup>th</sup> generation certified seeds as a base seed and no systemic testing was done for various types of diseases usually attacked during open field production of potato seeds. Although the company used some imported seeds but they used to get those seeds very late when the optimum time for seed sowing is over and also sometimes seeds were of bad quality. As a result average yield of potato at the farmer's level remained low. With support from PRICE the scenario has now started to change due to production of tissue cultured basic plant material in the country and subsequent seed production following strict protocol.

#### *Support to Produce Breeder Seeds Locally- a Shift from Dependency on Imported Seed*

This year PRICE helped its partners Ferdous Biotech (PVT) Limited, Technology for Rural Development, Sajib Seeds, Seed Potato Growers Association, Unique Seed Company, Communic Agro, and Konica Seed Company to grow clean seeds of Cardinal, Diamant and Granola, three major table potato varieties. These potato varieties are grown from the pre-breeder and breeder seeds under strict isolation in net houses. PRICE provided technical support to the enterprises to ensure strict hygiene practices and disease management in order to maintain genetic purity and to follow all technical parameters to produce clean seeds through several cycles and achieve a profitable output.



Plantation of disease free pre-breeder seeds

For example, PRICE introduced Konica Seed Company of Chuadanga to the Tissue Culture Laboratory of the Rural Development Academy (RDA), Bogra and requested RDA to help Konica Seed Company produce tissue culture originated clean seeds. Two field staff from the company were inducted in a two-week long residential training course organized jointly by

PRICE and RDA. For the first time, Konica Seed Company was able to produce good quality breeder seeds during this season, resulting in the production of 300 kilograms of disease free pre-breeder seeds, 500 kilograms of breeder seeds, and 3,200 kilograms of foundation seeds. PRICE also helped the company link with the Seed Certification Agency to obtain certification of the breeder seeds. Now Konica and a few other PRICE partner seed companies are no longer dependent on imported seeds. PRICE also provided technical expertise which has helped Konica Seed Company master the techniques of producing breeder seeds, following the strict technical protocols of the production and quarantine method. Through this effort, PRICE was able to take the technology to the southern part of the country to ensure future access to good quality seeds for those potato farmers.

PRICE also supported Ferdousi Biotech Limited to successfully produce 97 MT of breeder seeds from their 8.25 acre farm at Nilphamari, which will be used for further multiplication of next generation seeds. Sajib Seeds produced 1,950 kg of pre-breeder seeds from 15,000 plantlets brought from RDA, in Asurkhai village, of Syedpur upazilla, in a 0.33 acre net house. PRICE provided full-time technical assistance to Sajib Seed Company and Ferdous Biotech, from obtaining and hardening the plantlets to minimize shock, bed preparation, micro- and macro- nutrient management, pest control and quarantine, haulm pulling<sup>1</sup> at proper time, curing, sorting, and grading and packing. This year, through the technical assistance of PRICE, Sajib Seeds were able to achieve a 100% survival rate of their plantlets and successfully produced 8,042 kg of breeder seeds from their one acre of land.

PRICE supported Unique Seed Company of Bogra in the successful production of 11.9 MT of breeder seeds and 117.72 MT of foundation seeds of Cardinal, Diamant and Granola variety in their 22.3 acres of leased land. The company received disease-free pre-breeder and breeder seeds from RDA Bogra. PRICE organized a field day in Sherpur, Bogra, where 200 local potato farmers were invited to observe



Participants at a field day in Sherpur, Bogra

potato field conditions, management practices, and sample potato seed harvesting. They shared their experiences and participated in a technical discussion session organized by PRICE. PRICE provided technical assistance and trained the company's workforce on potato harvesting and post-harvest handling techniques.

#### *Supporting Tissue Culture Laboratories to Produce Plantlets, Min-Tubers and Subsequent Generation of Seeds*

PRICE has undertaken a strategy to improve the potato seed sector of the country through supporting the tissue culture technology of disease-free and clean potato tuber seed production cycles in a planned and comprehensive way. This will ensure that in the future, tissue culture laboratories dedicated to producing disease-free potato plantlets and seeds will be capable enough and continue to play a major role in seed improvement and access to quality seeds in Bangladesh. PRICE supported four organizations: Potato Seed Growers Cooperatives, Technology for Rural Development, Ferdousi Biotech and Rural Development Academy in building their capacity and human resource development for running tissue culture laboratories and to efficiently produce increased numbers of disease free plantlets of different varieties of potato, including processing types. Since RDA is one of the key players in this effort, PRICE supported it to provide more than 80,000 tissue cultured plantlets of

<sup>1</sup> Haulm pulling is carefully removing the stem/stalk of the mature potato plant, leaving the potato tubers underground.



mainly Diamont, Cardinal, Granola, and Lady Rosetta varieties to seven seed companies for growing of disease free seed potato.



Technician working at a tissue culture laboratory

As part of strengthening the existing labs and creating a pool of qualified tissue culture technicians in the sector, PRICE helped the RDA organize a two-week long residential training course in March for tissue culture lab technicians of several potato seed producing companies. The subject of the course was production of potato plantlets through tissue culture techniques, including meristem culture, media preparation, growth chambers and illumination

requirements, laminar flow and autoclave handling, testing for virus elimination at different stages of growth, requirements for enzyme-linked immunosorbent assay (ELISA) testing, transfer from bottle, hardening, isolation, net houses, and quarantines. PRICE further supported RDA to develop a training manual after conducting a training needs assessment of the participants. Twenty trainees attending the course learned the art and science of potato seed production through tissue culture techniques, both in the laboratory and in the field, under the guidance of experts.

*Sharing the Experience of Pre-breeder and Breeder Seed Production with Farmers and Extension Staff through Field Day*

To celebrate their achievement and share the success of producing breeder seeds with farmers, experts, extension staff of the Department of Agriculture Extension (DAE) and the Seed Certification Agency, and Konica Seed Company organized a field day on February 3rd in Lokanathpur, Chuadanga.



Field day organized by Konica Seed Company in Lokanathpur, Chuadanga

A number of experts from the DAE, the Director General of RDA, and farmers visited the potato seed field. They appreciated seeing the effort undertaken to produce seeds of excellent quality, and the company thanked PRICE for helping them achieve success by linking with RDA, obtaining pre-breeder seeds, supporting the training of field staff, and providing

technical assistance during the growing season. The company produced 3,310 kg of breeder seeds of cardinal variety for further multiplication. Other partners also successfully produced good quantities of breeder seeds.



Field day at Ferdous Biotech, Joldhaka, Nilphamary

Similarly, Ferdousi Biotech organized a field day for 290 farmers at Joldhaka, Nilphamari on February 2nd to show successful production of breeder and pre-breeder seeds following strict control measures, proper nutrient and moisture regime, isolation and haulm pulling at proper time. Deputy Commissioner of Nilphamari, local elites, potato experts, extension officials of DAE, local farmers and a PRICE representative attended the field day. The company expressed its appreciation to PRICE for providing technical support in

the production process.

#### Promoting Certified Seed Production through Contract Farming

PRICE supported PRIDE Agro-enterprise, ANKUR Seed and Himghar Limited, Konika Seed Company and Ferdous Biotech Limited to produce certified potato seeds. PRIDE Agro Enterprise is a newly formed company that started their certified seed production by organizing farmers in groups, organizing trainings, collecting foundation seeds from Tuber Crops Research Centre, Debiganj and providing technical support during the production season. Thirty seed potato farmers of PRIDE cultivated 36 acres of land; producing 303 MT of good quality certified seeds. PRIDE purchased 20.5 MT of grade -1 certified seeds at a premium price, and helped the farmers find cold storage for the remainder of their production.



Farmers piling up potatoes after harvesting

This year Konika Seed Company also produced some foundation seeds on their own farm for further multiplication, but their main thrust was production of certified seeds through contract farming. The company procured 911 MT of best graded potatoes from their 120 contract famers, who were trained followed by technical supervision through PRICE's support. Three



demonstrations plots were also established as part of the field training. Women workers were given hands-on training on grading and sorting of seed potato. PRICE also established linkages between the Seed Certification Agency and its partners. With technical support from PRICE, Ankur Seeds and Himghar Limited successfully produced 145 MT of foundation seeds and 696 MT of certified seeds from 111 acres of farm area in Debiboda of Debiganj.

#### Support in Organizing Field Schools for the Potato Farmers

PRICE worked with its partners to organize field schools for farmers, which is a completely new approach of learning by doing. During January and February, field schools for potato farmers were organized by PRIDE Agro Enterprise in Kamlapur, Belermath, Natunhat, Samoshpur and Abdulpur, Jessore District.

In the field schools, farmers were allowed to inspect their fields along with the experts during the most critical growth periods to discover problems, and determine growth and crop management status. They were then properly guided to identify diseases, insects, and corresponding control measures, soil moisture level and need for irrigation, growth stages and after-care. They were also shown how to implement haulm pulling and field curing. The farmers



Farmers inspecting their fields along with the experts

appreciated the learning process, which for most was their first time, and requested to have similar learning process for a longer period of time.

#### Promoting Processing Type of Potato Production

The consumption of French fries and potato snacks is rapidly growing in Bangladesh, but it is only recently that potato varieties specifically developed for these uses have been introduced in the country. To meet this growing demand, PRICE has taken the initiative to introduce processing type of potatoes – such as Asterix - among the Bogra farmers linked with its partners Gram Unnayan Kendra Enterprise Development (GUKED) and Murail Cooperative Society, and to link these groups of farmers with processing companies, such as Bombay Sweets and Co.

Although thousands of farmers are associated with GUKED and Murail, only 146 farmers showed interest in trying the new varieties, for a total of 59 acres. With PRICE assistance, results have been good, with an average yield of around 11 MT per acre, with some farmers achieving up to 14.4 MT of potato. Most of the farmers kept the potato in cold storage as seed, while some of them sold to interested buyers for a premium price of BDT 1,000 for a 40 Kg bag. Bombay Sweets procured 160 MT of potato from the farmers at a premium price. Farmers were happy to get the new variety, which has good taste and high market value.



### Assisting in Increasing the Productivity of Table Potato

Potato is becoming a very important food crop for the farmers of Bangladesh due to its per unit high productivity of carbohydrate compared to rice, minimal requirements for costly irrigation water, profitability, multiple uses as an industrial raw material, and most importantly, its potential to provide families with greater food security. Consequently, PRICE supports farmers to gain more knowledge and skills in increasing the productivity of their potato crops. PRICE is also encouraging farmers to expand potato cultivation in the southern areas of the country, particularly in the Jessore and Chuadanga districts.

PRICE supported Muktir Alo Agro Business, PRIDE Agro Enterprise, and Krishok Bandhu



Potato harvest field

Karmosuchi, and Golden Seed Processing Farm in the southern area to encourage farmers to undertake potato cultivation and expand table potato cultivation. To this end, PRICE helped the enterprises train 570 farmers on modern potato cultivation techniques and provided technical support to the farmers during the growing season.

PRICE and GUKED continued to support organized farming of table

potato. During the current growing season, PRICE organized 59 training sessions for 1,776 table potato farmers on production, harvesting and post-harvest handling of potato, along with short management refresher trainings for 1,096 previously trained farmers in Bogra. The trained farmers cultivated mainly Granola and cardinal varieties of potato on more than 2,000 acres of land. GUKED provided inputs and finance to their assisted farmers. About 20,000 MT of potato was produced by the farmers during the season, which is about 35% more compared to the production of the previous year.



Farmers being trained on quality potato harvesting

PRICE also supported Murail Cooperative

Association in Bogra to give hands-on training to their 230 farmers to farm potato on 113 acres of land. They produced a total of 1,056 MT of potato, which is about 20% more than that of last year.

### Facilitating Training on Harvesting and Post Harvest Handling of Potato

Although farmers in Bogra and many parts of the country have been engaged in potato farming for years, good quality potatoes are rare because of poor harvesting and post-harvest handling. Improper harvesting and post-harvest handling contributes to quick deterioration of the stored potato, disease and rotting, which results in about a 4-5% loss of farmers' harvested potatoes. This year PRICE made a special effort to work with partner organizations to train farmers and workforce on harvesting and post-harvest handling, which has helped improve the quality of harvested potato.



Post-harvest handling training for farmers

During this quarter, PRICE supported Unique Seed Company, Technology for Rural Development, Ankur Seed and Himghar Ltd., Sajib Seeds, Konica Seed Company, GUKED, Murail Cooperative Association, PRIDE Agro-enterprise, and Ferdous Biotech Limited, to train 1,250 farmers and potato field workers, most of whom

were women, on harvesting and post-harvest handling, maturity index, particularly haulm pulling, digging, curing in the field, and storing, sorting, grading, cleaning and final packing for storage or marketing.

### Facilitating Export of Potato to Tesco- Malaysia

Bangladesh occasionally exports potatoes to Malaysia and Singapore, but their quality is not high enough to be exported to any chain super shops. Last year PRICE learned of TESCO Malaysia's interest in importing quality potatoes from Bangladesh. TESCO Malaysia is the Malaysian subsidiary of the British retail giant, TESCO. The quality and the traceability of Bangladeshi



Sample of packed potatoes

potato were their major concern. To address these issues, PRICE and Golden Harvest brought a TESCO auditor and organized a field visit to a group of contract farmers in Chaok Volata

village of Shibganj upazila, Bogra at the end of January 2010. The auditor himself talked to the farmers, and observed the production process, measures taken to produce disease-free quality potato, harvesting methods, and finally the grading, sorting and packaging process. After confirming the traceability and quality of the potato, TESCO accepted the product and approved Golden Harvest as their supplier.



Potatoes ready to be exported to TESCO Malaysia

PRICE provided technical assistance to the contract farmers of Gram Unnayan Kendra Enterprise Development (GUKED) for growing high quality potatoes, and sorting, grading and packaging, as well as helping Golden Harvest Agro Industries to understand and comply with the international standards for exporting potatoes to the foreign market. As a result of working with a group of 1,500 GUKED contract farmers and Golden Harvest, PRICE helped to successfully close the first deal ever for the export of 300 metric tons of quality potatoes to TESCO

Malaysia. The first consignment of 25 MT was sent and received by TESCO at the end of March and received excellent marks, with zero percent major defects and only 0.18% minor defects. This year, another PRICE partner, Ferdous Biotech Limited made a deal with one Bangladeshi exporter based in Malaysia to export Granola potato in five kg net bags. The enterprise has already exported 91 MT of potato in 13 consignments. PRICE helped the enterprise to grade, sort, and pack the product per the buyer's requirements.

#### Supporting Training for Potato Cold Storage Staff

Cold storage in Bangladesh is not energy efficient and most of the staff involved in technical and managerial operations lack adequate knowledge in operating cold storage efficiently. In addition, an inadequate supply of electricity from the national power grid makes the cost of potato storage exorbitantly high.

To address this issue, PRICE organized two one-day training courses for the workforce, technical and managerial staffs of Sarder Rokeya Cold Storages at Gaidghat, Jessore. The training was conducted on the cold storage premises, with 60 participants at each training. The training course, which was facilitated by the Deputy Director of BADC Cold Storage Jessore and the Field Officer of Seed Certification Agency Jessore, highlighted the importance of field heat removal, pre-cooling, proper sorting, the proper use of the fan and blower, minimizing carbon dioxide accumulation by maintaining the regular inflow of air, revolving the gunny bags at regular intervals to allow proper cooling, and proper placement of bags for maintaining quality of potato and keeping seed potato in separate chambers.



## B. EGGPLANT

Eggplant is one of the most important cash crops for small holders. Farmers get the harvest at least twice in a week for three months period starting from March onward. In recent years many farmers abandoned or going to be abandon egg plant cultivation due to high pest attack, and increased cost of production. PRICE has been supporting thousands of small egg plant farmers in identifying and solving their production related problems and helping to minimize cost of production by adopting a mix of interventions.

During this season PRICE supported several organizations – Muktir Alo Agro Enterprise, Krishok Bandhu Karmashuchi, PRIDE Agro Enterprise, Vaterchar Farmers Association and EFADF Agro Enterprise—who are working with egg plant farmers to improve production, the adoption of safe and clean practices in pest management, and the establishment of market linkages.



Training session on "Improved Technology on Eggplant Cultivation through Contract Farming"

### Training on Modern Cultivation Practices, Pest Management and Contract Farming



Practical training on different important agronomic practices for farmers

PRICE supported Muktir Alo Agro Enterprise organize four groups of farmer trainings, consisting of 30 farmers each, on "Improved Technology on Eggplant Cultivation through Contract Farming." Each of the groups attended a two-day training course covering a wide range of topics based on the needs of the farmers. PRIDE Agro Enterprise also organized seven groups of eggplant farmers for training on

"Improved Technology on Eggplant Cultivation through Contract Farming." Each group of farmers, for a total of 210 farmers, attended two days of theoretical and practical training on different important agronomic practices, facilitated by scientists from Regional Agricultural Research Station of Jessore.

### **Demonstration Plot to Showcase Best Practices and Organizing Field Days**

PRICE supported the Vaterchar Farmers Association establish ten demonstration plots at Vaterchar, Darikandi and Jangua villages, with two high yielding varieties – BARI-1 and NAR-1. Each of the demonstration plots were established at the farmer's plot on about one third of an acre of land. A soil test was conducted before transplanting to determine its fertility, and fertilizer doses were accordingly estimated by a PRICE consultant and lime was added to correct the soil pH level. Farmers were trained on seed bed preparation, soil treatment, and only healthy seedlings were transplanted to the main demonstration field.

Five field days were organized in the same villages with the participation of nearby farmers and extension staff to show the effect of the use of healthy seedlings, proper soil treatment, liming, proper doses of fertilizer, and sex pheromones for insect control. Two field days were also organized in Vaterchar village to demonstrate the plots at the fruiting stage. The PRICE consultant demonstrated the right time to harvest, picking without injuring the plants, and sorting and organizing the eggplants for marketing.

### **Facilitating Technical Supervision and Market Linkages for Eggplant Farmers**

PRICE, jointly with the enterprises, provided technical support to the eggplant farmers during the growing period. PRIDE Agro Enterprise organized 210 farmers of Hurgati and Kandapur villages to be trained on production, pest management and harvesting techniques. The farmers were traditional eggplant growers but were abandoning the crop due to widespread attack of pest and diseases and increasing cultivation costs.

As a result of the trainings and technical support, eggplant farmers now use a mix of technology- pheromone trap, the right type of pesticides in the right doses, clean plots, irrigation depending on soil moisture content, and harvesting at the right time. Farmers have started harvesting their crops and PRICE is helping them market their product. Farmers' cost of production has decreased, and they don't need to take their products to the market since PRIDE Agro Enterprise is buying their products at market price.



Farmers with eggplants in front of the pheromone trap

## **C. MANGO**

### **Supporting Southern Mango Farmers to Increase Productivity**

PRICE supported ANKUR organize a training for 480 mango farmers of Chuadanga on improved orchard management, including post-harvest handling. Thirty farmers attended the training session where farmers were trained on theoretical concepts followed by practical lessons. They were taken to the nearby mango orchard to observe demonstrations of different methods to be applied while taking care of their orchards. Sixteen groups of farmers consisting of 30 farmers each attended the daylong training courses held in different locations throughout February and March.



Mango farmers at the nearby mango orchard to demonstrate different methods to be applied while taking care of their orchards

Following the training, technical supervision is being provided jointly by PRICE and ANKUR. The enterprise bought five-foot pump sprayers, specially designed for spraying pesticides for mango plants, and provided them to the contract farmers for use as needed. Since fruit setting is a critical period for the plants, occasional irrigation has also been organized to minimize fruit drop.

#### **D. CROSS CUTTING ISSUES**

##### **Assisting Resource Poor Farmers to Grow Pesticide Free Vegetables in Dykes**

PRICE is working closely with its two partners – EFADF AgroEnterprise and Organix—to assist 680 resource poor horticultural farmers of Khulna, who cultivate mainly vegetables - especially vine crops on small strips of dykes around small water bodies. Organix supported 114 male and 66 female contract farmers, trained in the previous quarter, to successfully produce 412 MT of safe vegetables during the period following technical advice of field supervisors and by using learning materials supplied to them during trainings. The enterprise supplied organic fertilizers, and biological pesticides such as Mahogany oil and pheromone traps to control pests.

Organix is marketing some of the safe vegetables directly through its contracted wholesale outlet and farmers are also selling part of their produce to meet daily expenses. During this reporting quarter, Organix was able to sell 188,270 kg of safe vegetables through sourcing directly. The farmers marketed 176,057 kg of safe vegetables through the market linkages established by the enterprise. The total revenue during the period was Tk.5, 673,569. Farmers were able to increase their productivity by 10% compared to last season, and household income increased by about 9%.

EFADF Agro Business, a PRICE partner in Khulna, is also promoting safe vegetable production and marketing through organizing and supporting resource poor marginal farmers. The enterprise is supporting 500 small vegetable farmers by providing hands-on training on safe vegetable production technology through regular technical supervision, and supplying seeds and other inputs, particularly compost suitable for the production of vegetables. During this reporting period, six demonstration plots were established with tomato and other winter crops to show safe crop production techniques. EFADF Agro Business bought vegetables from the farmers from its collection points at local market price, sold 318,914 kg of safe vegetables to a distant market, and the farmers directly marketed 308,971 kg vegetables. Total revenue generated from selling safe vegetables was Tk.7, 791,423.



## **Organic Compost**

### **Promoting Tricho and Vermi Compost<sup>2</sup> for Sustainable Horticultural Crop Production**

PRICE assisted Ryia Fertilizer in training 700 farmers of Sirajganj on the use and application of Tricho and vermi- compost to produce vegetables and achieve higher yields while minimizing the cost of production. The enterprise also provided technical orientation courses to 100 sub-assistant Agriculture Officers of the Department of Agriculture Extension of Sirajganj district on the use of tricho compost on plant growth and disease control. These officers will be disseminating the technology among the farmers of the district. Trained farmers produced mainly cucumber, okra, and green chili by using compost and tricho-extract as a plant disease-protecting agent. Farmers using the compost and tricho extract achieved higher crop yields by 20-25%, which contributed to the overall soil health through a sustainable production. Five demonstration plots were also established to demonstrate the effect of composts on plant growth, crop yield and disease control to the neighborhood farmers. The company sold 87 MT of compost and 373 litres of tricho-extract in comparison to zero sales during the same period of the previous year.

## **Access to Finance**

Access to finance is crucial in seed and table potato production since potato production is expensive and needs cash investment. Several PRICE supported partners that have linkages with microfinance institutions and banks organized loans to their contracted farmers. Konica Seed Company provided loans totaling Tk.6, 014,400 to their 120 contracted farmers for potato production. GUKED provided crop based seasonal loans of Tk. 20 million to their 1,700 potato farmers for the production of table potatoes.

Two commercial banks, National Bank Ltd and Rajshahi Krishi Unnayan Bank, provided Tk. 40 million to the seed farmers of the Seed Potato Growers Association of Rajshahi for the production of seed potato during the season. Two Khulna-based enterprises also received loans from two banks for expansion of their agro-businesses. ORGANIX received Tk.400,000 as loan from Janata Bank Ltd while EFADF Agro Business received Tk.2,700,000 from BASIC Bank Ltd Khulna.

## **E. QUANTITATIVE RESULTS**

Horticulture sector partners increased their sales by USD 2.9 million in this quarter. GUKED and its farmers and Golden Harvest Agro Processing Plant were highest in increasing sales. 2,190 jobs were created by the partners, GUKED also helped to increase the jobs most. USD 103 thousand of new investment was created during the quarter. GKSSE invested the most in this quarter, followed by Ankur Seeds and TFRD

<b>Results in Horticulture during Jan-Mar 2011</b>	
<b>Sales increased</b>	<b>\$2.9 million</b>
<b>New jobs</b>	<b>2,190</b>
<b>Investment increased</b>	<b>\$103 thousand</b>
<b>Training for workforce development</b>	<b>1,250</b>
<b>Farmers received micro credit</b>	<b>2,700</b>
<b>Farmers trained in technology</b>	<b>3,056</b>
<b>Farmers trained in management</b>	<b>1,816</b>

<sup>2</sup> Tricho compost is a kind of bio-fertilizer prepared by using *Trichoderma*, a soil borne fungus extracted, cultured and used for decomposing plant parts and other organic materials. Vermi compost, on the other hand, is prepared by using a special type of earthworm to decompose the organic material.

## PARTNER-WISE RESULTS IN HORTICULTURE:

Region	Partner	Sales Increased (USD)			No. Total Jobs Created*			Investment Increased (USD)
		Domestic	Export	Total	Male	Female	Total	
Bogra-Rajshahi	GUKED-1	365,296	-	<b>365,296</b>	220	159	<b>379</b>	-
	GUKED-2	114,597	-	<b>114,597</b>	525	295	<b>820</b>	-
	GKSSE	50,808	-	<b>50,808</b>	12	12	<b>24</b>	<b>33,333</b>
	Murail Rural	22,683	-	<b>22,683</b>	(32)	(14)	<b>(46)</b>	-
	RDA	-	-	-	24	15	<b>39</b>	<b>2,616</b>
	Riya Fertilizer.	15,364	-	<b>15,364</b>	5	0	<b>6</b>	-
	Ankur Seeds	2,778	-	<b>2,778</b>	30	27	<b>57</b>	<b>13,889</b>
	Ferdous Biotech	20,833	-	<b>20,833</b>	10	8	<b>18</b>	<b>11,111</b>
	Bombay Sweets Processing	17,778	-	<b>17,778</b>	43	25	<b>68</b>	-
	Sajib Seeds	5,556	-	<b>5,556</b>	22	9	<b>31</b>	-
	Unique Seeds	1,417	-	<b>1,417</b>	11	7	<b>18</b>	<b>722</b>
	TFRD	8,750	-	<b>8,750</b>	8	2	<b>9</b>	<b>13,889</b>
Mango	Ankur Mango	-	-	-	7	-	<b>7</b>	<b>275</b>
Jessore-Khulna	Konika Seed	(4,634)	-	<b>(4,634)</b>	25	19	<b>44</b>	-
	Padma Seeds	10,693	-	<b>10,693</b>	(0)	0	-	-
	Organix	78,800	-	<b>78,800</b>	3	1	<b>4</b>	-
	Lal Teer Seed	130,435	-	<b>130,435</b>	22	4	<b>27</b>	-
	EFADF Agro Business	108,214	-	<b>108,214</b>	14	2	<b>16</b>	-
	Golden Harvest Processing.	269,537	131,588	<b>401,126</b>	2	3	<b>5</b>	-
	Muktir Alo Agro Business	3,087	-	<b>3,087</b>	4	0	<b>4</b>	-
	PRIDE Agro Enterprise	139,337	-	<b>139,337</b>	27	13	<b>40</b>	<b>512</b>
	Krishak Bandhop Karmoshuchi	20,833	-	<b>20,833</b>	11	5	<b>15</b>	<b>1,736</b>
	Golden Seed Pte Ltd	58,333	-	<b>58,333</b>	34	15	<b>49</b>	<b>5,186</b>
Farmers trained by partners	GUKED-1 Farmers	621,700	-	<b>621,700</b>	398	71	<b>469</b>	<b>5,725</b>
	GKSSE Farmers	749,587	-	<b>749,587</b>	65	20	<b>85</b>	<b>14,178</b>
	<b>Total</b>	<b>2,811,781</b>	<b>131,588</b>	<b>2,943,370</b>	<b>1,492</b>	<b>698</b>	<b>2,190</b>	<b>103,173</b>

\*Jobs are calculated using job model to estimate the across the value chain results of job creation.

**Source of data: Partner interviews**



## AQUACULTURE

The aquaculture sector supplies more than 60% of animal protein demands in the country, and has earned roughly USD 470 million through the export of shrimp and fish during July 2010 to March 2011 (9 months of the 2010-2011 fiscal year). The domestic market of fish is expanding due to increased income of the masses, especially in urban areas. Fish is vital in Bangladesh's diet and crucial to food security. The sector also helps to alleviate poverty by creating jobs and self- (or family) employment. Shrimp and fish are the two major components of aquaculture in the country, and they both have great potential for growth: fish for domestic consumption and shrimp/prawn for export.

The total area dedicated to land-based fish and shrimp farming in Bangladesh has probably reached its peak<sup>3</sup> on the basis of total area it covers. Therefore, the priority now should be increasing productivity and expansion to open water through pen and cage farming, both for fish and shrimp. In this regard, it is noteworthy that Bangladesh has over four million ha of open inland water bodies - rivers, estuary, lakes, natural depressions and seasonally inundated flood plains, that is to say, more than a quarter of its territory.



Series of ponds for catfish farming



Series of ponds for carp farming

Brackish water shrimp farming is done in the coastal belts and per unit area production is still very low. Fish is usually farmed in closed water bodies throughout the country and the yield of some farmed species has reached to well above 20 ton/ha. Freshwater prawn overlaps shrimp and fish farming areas and the yield of fresh water prawn may be considered modest. Bangladesh attained self-sufficiency in seed production of fish and shrimp but lags behind in prawn seed production in hatcheries. In a densely populated country like Bangladesh, transformation of single cropping pattern of fish and/or shrimp towards farming integration of producing diverse crop seasonally will be vital for income generation, employments, exports and food security.

PRICE is working together with its partners to increase productivity by promoting responsible aquaculture practices and quality grade inputs that allow for higher stocking densities and yields without increasing disease and mortality rates. January-March is the beginning of aquaculture activities for traditional, improved and household based farming, so emphasis was given to initiate training programs by recruiting resources for delivering technical assistances.

<sup>3</sup> With a population of 160 million people housed in roughly 14.5 million hectares, further expansion of land based aquaculture would impinge upon land used for field crop production, mainly rice. Aquaculture currently covers about 0.5 million hectares.

The project also continued facilitating access to better inputs and finance, and assisted the shrimp industry to open new market linkages in Middle Eastern markets for edible fish and shrimp. For example, PRICE facilitated the participation of a group of processors and exporters to the Dubai Gulf Food Fair to explore new markets and lessen their dependency on EU and North American markets alone. The visit by nine processors/exporters from five processing plants established linkages with new buyers in the Middle East and elsewhere.



Series of ponds for shrimp semi-intensive farming



Series of ponds for Traditional shrimp farming

The growing number of fish and shrimp farmers and workers trained on improved farming technology reached to 33,126 (1,316 this quarter). By the end of March 2011 the total number of farmers trained on improved management reached 15,235 (3,100 in the quarter), and the number of trained workers reached 4,479 (22 in this quarter).

Aquaculture sector partners gained increased sales of USD 23.3 million in this quarter. Major portion of this high sales in this period came through the processing firms in shrimp subsector and GHERS initiative. Jalalabad, Jahanabad and Organic Shrimp processing plants led to an increased sales of USD 12.7 million. GHERS

**PRICE Achievements in Aquaculture during Jan-Mar 2011**

<b>Sales increased</b>	<b>\$23.3 million</b>
<b>New jobs</b>	<b>3,837</b>
<b>Investment increased</b>	<b>\$772 thousand</b>
<b>Farmers trained in technology</b>	<b>1,300</b>
<b>Farmers trained in management</b>	<b>3,116</b>
<b>Training for workforce development</b>	<b>22</b>
<b>Farmers received micro credit</b>	<b>341</b>

helped to increase sales by USD 3 million. In Fish subsector, the big players to increase sales in this period were Kahaloo Fish Farmers Association (USD 1.5 million), Sherpur Fish Association (USD 1.2 million), Kahaloo Motshopona Baboshahi Somity (USD 1.3 million) and Nazirartek Fish Dryers' Cooperative (USD 945 thousand). Also DMBBS, Tarakanda and Bhaluka associations played a big role in increasing sales. In job creation, aquaculture sector partners achieved 3,837 new jobs in this quarter. Kahaloo fish farmers' association and Nazirartek fish dryers were the highest achiever here. USD 772 thousand of investment was generated in aquaculture sector during the period. In creating new investment in fish subsector, Tarakanda, Kahaloo fish farmers' associations and Golden Harvest Fish

Processing Plant were major contributors. GHERS project played the major role in increasing job and investment in the shrimp subsector.

## A. FISH

Across the country, PRICE collaborated with a total of 44 partners during this reporting period: 18 farming associations, nine farming groups within NGOs, 11 hatchery cum farming groups, one seed traders association, one input seller company, one processing factory, and one association for dry fish and two feed millers. The project has linked farmers to quality seed-producing hatcheries and nurseries, and has facilitated trainings for farmers on farm management for different fish species, from pond preparation to harvesting and marketing. PRICE has provided technical assistance to 1,300 farmers during this quarter, for a total of approximately 18,663 fish farmers, including 5,887 women (554 this quarter) since the project's start. Since this quarter marks the beginning of farming preparations for micro, small and medium farmers who do not practice perennial farming, most management related trainings were conducted in the reporting period. In this quarter, PRICE signed an MOU with an enterprise-based commercial feed miller, one farming association, one aquaculture input seller, and an exporter of value added fish. Another MOU with a fish hatchery in Potia, Chittagong is close to being finalized.

### Early Crops Using Over-Wintered (OW) Seeds

PRICE partners, Agriculture Advisory Society (AAS) in Natore, Trisal Fish Farmers-Business Somity (TFFS), Tarakanda Satata Matsya Somity (TSMS), Muktagacha Fish-Farmers & Business Association (MFBA) and Bhaluka Motsya-Chashi Samaboya-Somiti (BMCS) in Mymensingh, Kahaloo Matsya Chashi Samoby Samity (KMCSS), and Mourail Matsya Chashi Samoby Somity (MMCSS) and Talora Ancholik Motsya-Chashi Samaboya-Somiti (TMCS) in Bogra expanded their grow-out farming in early months of 2011 using over-wintered (OW) fish seeds.



OW seeds ready for sale in Fish Seed market



Fish Seeds vendors awaits for OW seeds

Of the previously mentioned partners, most of their members have been using OW seeds for the past few years. In addition to these seven partners, some members/beneficiaries of MFBA, Phulpur Fish and Prawn Farmers' Association (PFPPFA), Trinomool Manobik Unnayan Sangstha (TMUS), Rakhaing Development Foundation (RDF), Adamdighi Khudra-Motsya Bebohashi-Somity (AMBS), Sherpur Motsya-Chashi Samaboya-Somiti (SMCS) and Society for Sustainable Development for the Rural & Urban Area (SSURD) associated farmers also initiated early crops during the January-March period. Most of the farmer beneficiaries

produced their own OW seeds but large commercial farmers of the different associations used OW seeds produced on their own and also purchased additional seeds from seed traders. Aquaculture seed production is generally done seasonally suitable for seasonal fish/shrimp farming; however, many farmers now practice perennial farming that necessities round the year seed supply. OW is a high density and controlled rationed nursing process by which seeds may be stored and/or retained for year-round uses.

### Expanded Trade with OW Seeds

During this quarter Digheerkanda Mastopona, Bebohashi-Kallan Bohumukhi Somabaya Somity (DMBBS) and Kahaloo Matsya-pona Utpadonkari Samaboya-Somiti (KMPUSS) expanded their



A busy OW seed market in Jessore

trade of a variety of OW seeds to both PRICE partners as well as to different farming groups throughout Bangladesh. DMBBS is also promoting the OW fingerlings to farmers throughout Bangladesh.

With training and counseling assistance from PRICE on overwintering nursing, some members of both DMBBS and KMPUSS, in addition to their fish seed trading business, also practiced over-wintering nursing as a side business.

### Expanded Brood Fish Production

PRICE facilitated trainings, counseling and hands-on teaching to nine carp and mono-sex tilapia hatcheries in Jessore, Khulna, Pabna and Cox's Bazar areas. These trainings focused on collection and selection of quality grade genetic resources for better brood rearing and brood pond management. This is increasing the capacity of these hatcheries to produce more biomass of broods in their in-



An exotic carp brood

house brood banks through stocking better genetic resources, and better pond preparation, feeding, water, health and feed management.



An indigenous carp brood

Infrastructure modifications and renovations were also instrumental for housing more specimens for brood productions. PRICE also provided follow-up assistance to hatcheries on

quality grade feed formulation and judicious feeding.



The performance of some hatcheries' maintenance of brood banks and seed production has been outstanding, and two members of USAID's mid-term evaluation team spent a significant amount of time at two hatcheries in Jessore to observe their broods and early breeding activities.

#### Initiative by Partner Hatcheries to Produce Early Fish Seeds



Early seed production by a hatchery in Jessore

Fish seed production in Bangladesh is usually conducted during the monsoon season, which corresponds with fish's natural seed production. Through training, counseling and hands-on teaching, PRICE motivated partner hatcheries to develop broods and used broods in hatcheries relatively early to produce conventional seeds before peak season in April-May. During this reporting period, PRICE supported six fin fish hatcheries to produce fish seeds. However, participating hatcheries reported that producing early seeds was most successful with exotic fish that originated from relatively colder regions like

Hungary (common carp) and China (Chinese carp).

#### Linking of Small Hatcheries to Sources of Quality Grade Brood Fish

Some farmed fish species like climbing perch and stinging catfish are proven to be successful broods for producing good seeds. In Mymensingh areas, some small hatcheries are members of PRICE-assisted fish farming associations.

PRICE linked beneficiary-member hatcheries of fish farming associations to different sources of brood suppliers (Fisheries Research Institute, Brood Banks of Department of Fisheries, big hatcheries with excess brood) in order to diversify their sources of broods (male and female) so that farmed broods can maintain different genetic lines, thereby avoiding potential genetic defects that could result in a decline in biomass production efficiencies.



Small hatchery owner procure broods from known sources

#### Promoting Better Farming Practices

Between January and March 2011, the project and its partners organized a total of 26 trainings for 1,300 fish-farmers (including 454 female farmers) on improved farming techniques. These farmers were a part of large and medium-sized commercial farming groups under associations, as well as from marginal and micro or small resource poor farming (RPF)

families associated with NGOs. The NGO-associated farmers received trainings basically on integrated farming technologies. PRICE helped to conduct improved farming training sessions for farmers of different categories; the largest group assembled at Society for Social Service (SSS) (nine trainings, with 450 all women members), followed by Barisal Aquaculture Development Society (BADs), Murail Matsya Chashi Samabay Samity (MMCSS), Sherpur Matsya-Chashi Samaboya-Somiti (SMCSS) and Bhaluka Matsya Chashi Smabay Samity (BMCS), (each with three trainings for 150 male trainees), Kahaloo Matsya Chashi Samoby Samity (KMCSS) also arranged three trainings for 150 trainees where four were women. Besides, Adamdighi Khudra-Motsya Bebohashi-Somity (AMBBS) and Society for Sustainable Development for the Rural and Urban Area (SSURD) both arranged one training program each comprising of 50 male trainees.



Management training by SSS in Noakhali



An improved farming training at Bogra

### Improving Management Skills of Farmers

During the reporting period, PRICE and its partners organized a total of 61 management trainings. Through these trainings, the project helped train a total of 3,100 fish-farmers on improved farm management, including group procurement of inputs necessary for farming, group marketing, cost benefit analyses, and documentation. The SSS trained 1,550 farmers, all of whom were women. Tarakanda Shatata Matsya Baboshayi Samity (TSMBS) trained 300 farmers on management including 141 females and BADs trained 350 and among them four were women. Rest of the partner groups trained all male farmers (MMCSS -150, AMBS – 50, SMCSS – 150, Mulia Matsyajibi Samity (MMS) -200, SSURDA – 50 and BMCS - 150)

### In-Country Study Trips



A farmer group: Jessore to Mymensingh

During this quarter PRICE facilitated 14 in-country study trips among PRICE cross-partner sites, providing lower producing partners with the opportunity to visit higher producing partners to observe their farming techniques. Most of the visiting groups (from Bogra, Natore, Pabna, Jessore, Satkhira and Khulna) expressed an interest in visiting Mymensingh region, where they have reached very successful production levels of pangas, tilapia, climbing perch, stinging catfish, and local and exotic

carp. A group of farmers from Muktagacha in Mymensingh area also went to Khulna region to observe fresh water prawn farming techniques to incorporate prawn with carp in their area. A group of hatchery operators from Jessore also visited Chittagong region to observe the source of inbreeding free seeds of indigenous carp in the Halda River basin.

A group of women fish farmers and nursery operators associated with Ma Fatima hatchery in Jessore explained their experiences of the in-country study trip to Mymensingh areas to USAID mid term evaluation team members when they visited Jessore and Ma Fatima hatchery on March 11, 2011. The women members explained that it was for the first time in their lives that they visited outside of their dwellings without family members accompanying them in a conservative society besides gaining exposure to comparatively better farming/nursing methodologies.

### Market Study on Pangas and Tilapia

A market study carried out by PRICE during the last quarter in 2010 was completed during this reporting period. The study mainly focused on two commercially important farmed species, namely pangas (Mekong river catfish) and tilapia (mainly genetically improved farmed Tilapia, [GIFT] and mono-sex tilapia). The main objectives of the study were to determine the current status and trends in the supply and demand of the two important farmed fish species in Bangladesh; assess the impact of farming of the two species, production and supply chain, input manufacturing and supplies; examine the prospect of export and value-added product development; examine projected future trends; and, assess the implications of the findings of the aquaculture and fisheries sector in the country.

Among the most significant findings of the study are the following:

- There are no hatcheries that produce exclusively pangas seed in the country. In contrast, a total of 191 operational mono-sex tilapia hatcheries produced 1,430.4 million fry/fingerlings in 2010. Due to different production mechanism (converting would be bisexual babies to all males), mono-sex hatcheries produce only tilapia seeds.



Tilapia seed production is in progress



Commercial pangas seed nursing

- In 2010, 56 feed mills produced around 568,000 tons of feed, of which 62,000 tons were floating and rest were sinking pellets. Commercial production of aquaculture feed has increased three-fold in only five years. Over 95% of commercial pellet feeds were consumed by farmed fish and less than 5% by farmed shrimp/prawn.

#### Quantification of pangas and tilapia table fish production in the country

- Pangas is the most-cost effective fish and mostly consumed by both rural and urban poor. Tilapia is also relatively a cheaper fish, consumed by poor and middle class both in rural and urban areas.
- It is projected that production of pangas and tilapia in the country by 2016 will be approximately 379,965 and 93,263 tons, respectively, from estimated current production levels of pangas 253,310 and tilapia 62,175 tons.

#### Popularization of Improved Dried Pellet Feeds for Fish

Use of supplemental feeds for fish is a relatively new development in Bangladesh aquaculture; less than 25% of the cultured fish produced in the country are fed on dry commercial pellets (fish production by farming in Bangladesh is 1.4 million ton; and out of 1.4 million ton, only 0.3 million ton is cultured fed on dry commercial pellet), through feeding dried pellet feeds in the country. Dry pellet ensures less water pollution and high productivity of fish/shrimp, and reduces the size of horizontal expansion of farming to vertical production efficiencies. PRICE is addressing this issue by promoting improved feed and its use among fish farmers. During the reporting period, the project initiated work with a feed mill in Mymensingh, SMS Feeds Limited, which specializes in fish feed formulation and marketing.

#### Improving Access to Finance

Fish farmers who do not own large or medium-sized farms are usually unable to receive institutional credits due to multi-ownerships of water bodies and leased physical resources. Physical resources in aquaculture are mainly ponds, and closed water bodies that are sometimes leased by farmers. Since lease document does not serve the banks' requirement of collateral for considering loan proposals, PRICE continued to assist these farmers to obtain loans from micro-credit sources, including three NGOs: SSS, Jano Seba Kendra (JSK) and TMUS. These loans ranged from BDT 3,000 to 35,000.

### **QUANTITATIVE RESULTS**

PRICE has provided technical assistance to 1,300 farmers during this quarter, resulting in a cumulative total of approximately 18,663 fish farmers, including 5,887 women (454 this quarter). Partners in fish subsector have increased their sales by \$8.4 million in this quarter. More than \$494,276 was invested in the period.

Achievements in Fish during Jan-Mar 2011	
<b>Sales increased</b>	<b>\$8.4 million</b>
<b>New jobs</b>	<b>(272)</b>
<b>Investment increased</b>	<b>\$494,276</b>
<b>Farmers trained in technology</b>	<b>1,300</b>
<b>Farmers trained in management</b>	<b>3,100</b>
<b>Farmers received micro credit</b>	<b>341</b>



## Partner-Wise Results in Fish

Region	Partner	Sales Increased (USD)			No. Total Jobs Created*			Investment Increased (USD)
		Domestic	Export	Total	Male	Female	Total	
Mymensingh-Jamalpur	DMBBS	613,799	0	613,799	30	0	30	5,431
	PFPFA	120,067	0	120,067	64	0	64	27,162
	TFFS-1	23,536	0	23,536	(190)	(1)	(191)	1,464
	TFFS-2	(2,105,288)	0	(2,105,288)	(210)	0	(210)	4,628
	Nokla Cooperative	88,646	0	88,646	43	12	55	6,667
	Bamunji Cooperative	26,563	0	26,563	25	4	29	5,000
	Muktagacha Fish Farmers' Asso	(560,648)	0	(560,648)	33	0	33	5,778
	Unnayan Sangha (US)	39,702	0	39,702	(9)	0	(9)	2,115
	Tarakanda Asso.	624,650	0	624,650	146	0	146	71,917
	Bhaluka Asso	626,405	0	626,405	(1,209)	0	(1,209)	11,285
Bogra-Rajshahi	TMUS-1	341,306	0	341,306	55	(1)	55	9,462
	TMUS-2	160,727	0	160,727	(1,562)	1,317	(245)	36,427
	Chitralatha Aqua Park Ltd - Kasinathpur, Pabna	(2,696)	0	(2,696)	17	0	17	582
	Kahaloo Association	1,527,968	0	1,527,968	398	2	400	53,241
	Pachpir Association	184,272	0	184,272	60	2	62	5,902
	Murail Association	243,720	0	243,720	64	2	66	6,304
	Society For Sustainable Development for The Rural and Urban Area	844,607	0	844,607	77	0	77	38,494
	Talora Ancholic Motsya Chashi Somoby Somity	393,473	0	393,473	(197)	5	(192)	13,264
	Sherpur Matsa Chasi Somoboya Somity	1,162,679	0	1,162,679	98	(2)	96	25,358
	Kahaloo Matshya Pona Utpadankari Somoby Somity - Bogra	1,252,044	0	1,252,044	7	(4)	4	13,842
	Adamdighi Khudra Motsyo Babsaic Somity	339,908	0	339,908	49	(0)	48	7,758
	North Bengal Thaitech Tilapia Hatchery	(2,298)	0	(2,298)	(0)	0	(0)	2,300
	Agriculture Advisory Society (AAS)	227,788	0	227,788	(182)	0	(182)	28,119
Barishal	RDF-1	104,843	0	104,843	(1)	0	(1)	0
	RDF-2	(590,452)	0	(590,452)	(213)	0	(213)	15,972
	Barisal Aquaculture Development Society	6,402	0	6,402	5	0	5	0
Coxs	SSS-1	391,682	0	391,682	109	0	109	28,993

	SSS-2	381,237	0	381,237	77	(1)	76	7,180
	Jonoseba Kendra	53,048	0	53,048	5	0	5	250
	Nazirertek Fish-dryer's Multipurpose Co-operatives-Society	944,727	0	944,727	147	507	654	0
	Allawalla Hatchery & Farming Complex	31,761	0	31,761	13	0	13	0
	Samridhi Bhomuki Matsya O Unnyan Gobeshona Kendro	1,782	0	1,782	1	0	1	194
Jessore-Khulna	Mulia Matshyajibi Samittee (MMS)	98,466	0	98,466	(0)	0	(0)	0
	Gondhamari Motshygibi Samabaya Somiti	33,589	0	33,589	5	1	5	7,104
	South Bay (Pte) Ltd.	10,000	0	10,000	7	0	7	0
	Nawapara Fisheries Complex	1,884	0	1,884	13	1	14	0
	Ma Fatema Fish Hatchery	13,722	0	13,722	19	0	19	0
	Pori Matshya Hatchery	7,246	0	7,246	5	0	5	0
	Rupali Fish Hatchery	6,000	0	6,000	19	0	19	0
	Shuvra Matshya Hatchery	28,986	0	28,986	23	0	23	0
	Din Bijoy Enterprise	0	0	-				
	Vairob Fish Agency	0	0	-				
	Razu Enterprise	8,017	0	8,017				
	Modina Fish	0	0	-				
	Mondal Fish	1,958	0	1,958				
	Satata Fish	5,000	0	5,000				
Proces sor	Golden Harvest Seafood and Fish Processing Ltd.	-	281,250	281,250	(6)	2	(4)	48,611
Input seller	Fishtech (BD) Limited	114,583	-	114,583	-	-	-	3,472
	Satkhira Feed	339,038		339,038	47	0	47	0
Farmers trained by Hatcheries	Chitralatha Aqua Park Ltd - Kasinathpur, Pabna	205,618	0	205,618	(25)	(2)	(26)	9,997
	North Bengal Thaitech Tilapia Hatchery	89,321	0	89,321	(1)	0	(1)	3,519

Allawalla Hatchery & Farming Complex	21,592	0	21,592	(0)	0	(0)	0
Samridhi Bhomuki Matsya O Unnyan Gobeshona Kendro	6,835	0	6,835	11	0	11	669
South Bay (Prv.) Ltd.	(52,161)	0	(52,161)	(12)	0	(11)	1,770
Nawapara Fisheries Complex	153,485	0	153,485	46	1	47	4,861
Ma Fatema Fish Hatchery	(4,710)	0	(4,710)	8	(0)	8	139
Pori Matshya Hatchery	28,431	0	28,431	37	(0)	37	2,224
Rupali Fish Hatchery	17,055	0	17,055	24	(0)	24	1,216
Shuvra Matshya Hatchery	(29,703)	0	(29,703)	11	(0)	11	3,160
<b>TOTAL Fish</b>	<b>8,164,452</b>	<b>281,250</b>	<b>8,445,702</b>	<b>(2,118)</b>	<b>1,846</b>	<b>(272)</b>	<b>494,276</b>

\*Jobs are calculated using job model to estimate the across the value chain results of job creation.

**Source of data: Small sample surveys for farmer groups and partner interviews for enterprises**

**Notes:** For job creation, some partners faced negative changes compared to the same quarter in baseline year which made the total performance of job creation in fish subsector negative. However, considering the agricultural seasons highly dependent on various uncontrollable issues like climate etc. and the reporting season consisting only a part of a whole aquaculture season, any comment on this negative performance is yet to be made. PRICE holds the same opinion for the negative change in sales for some partners.

## B. SHRIMP

The geographical distribution of *bagda* (salt water black tiger shrimp) is restricted to southwest and southeastern parts of the country, primarily in Khulna, Satkhira, Bagerhat, and Cox's Bazar districts because of their proximity to salt water and narrow demographic distribution in the coastal belts. PRICE collaborates with the World Fish Centre (WFC) and a few shrimp farming associations.

PRICE signed two MOUs with two semi-intensive farms in Khulna. One of them produces screened post larvae (PL) for their own use and sells them to farmers in the greater Khulna region. Low productivity is the main problem in the shrimp sector, and increasing stocking density while preventing disease outbreak is the key to increasing yields and export earnings.

Bangladesh shrimps in the world market fraught with danger of export ban due to contamination, use of banned antibiotics and malpractices. In order to avoid export bans, the industry needs to avoid contamination, the malpractice of incorporating additives in shrimp to increase weight, implement traceability, and comply with Bangladeshi labor law.

Although January through March is not the peak season for shrimp farming and yield, it is necessary to ensure a strong supply of disease-free and traceable PL prior to stocking. Laboratory testing is essential to ensure whether the hatchery produced PL are disease-free, and PRICE therefore continued building the capacity of a private testing lab to ensure increased supply of screened PL.

PRICE collaborated with other USAID projects, including Winrock International's "Farmer to Farmer" program, in order to obtain support from a high profile U.S. consultant for two of the PRICE partner processing plants. The consultant helped build their capacity to develop value-added products and to quantify the status and potential of manufacturing value-added products.



US Ambassador and USAID Mission Director  
at a shrimp farm



Discussion with integrated shrimp farmers

Through the GHERS initiative, PRICE promoted improved farming practices and a market for virus-free, screened PL. Seventeen depot owners in Bagerhat, Satkhira, and Khulna, with the assistance of PRICE, organized thousands of farmers under contract farming systems to receive training on one of the three categories of improved farming: closed system pond technology (CST), modified traditional technology (MTT), or traditional best management



practices (TBMP). Approximately 12,000 additional shrimp farmers were taught basic concepts of shrimp farming using tested and virus-free PL and upgraded farming procedures.

During this quarter, PRICE assisted five shrimp processing plants to arrange trips for their nine managerial staff members to attend the Dubai Gulf Food Fair 2011 on a cost-sharing basis. Middle Eastern buyers have already ordered frozen shrimp and new orders are expected. The establishment of linkages with foreign buyers, especially in untapped and newly emerging sea food markets in the Middle East, was one of the primary outcomes of the Gulf Food Fair 2011.



Shrimp processing in a plant in Khulna



Bangladesh produces large Bagda for the world market

In this period, shrimp subsector partners increased their sales by about \$14.8 million, invested more than \$278,127 and created around 4,109 jobs.

### GHERS Initiative

The main thrust of the GHERS initiative is to increase shrimp production using different methods of farming. GHERS encourages enhanced productivity by introducing improved farming practices (CST, MTT and TBMP). In this quarter, extension specialists and extension facilitators (EF) trained an additional 10,785 farmers on improved farming methods under three distinct categories: CST; relatively high density farming; MTT; upgraded management within the reach of farmers; and TBMP through back-yard based trainings. By the end of



Raised bagda in a GHERS farm

2011, a total of 22,560 farmers will be trained as a result of the GHERS Initiative.

As part of providing improved farming trainings to new farmers, 22 new EFs have been recruited through depots. New EFs are provided five days of residential foundation training on improved shrimp farming technologies and monitoring and evaluation. Along with the EFs, 16 depot owners/representatives also participated in the training.

In addition, two one-day refresher trainings were provided to previously trained EFs and depot owners on various technical topics. A total of 52 participants attended the training, of which 35 were EFs and 17 depot owners.

#### Screening of Virus-Negative Post Larvae

PRICE supports the production of tested /screened virus-free PL of bagda through Polymerase Chain Reaction (PCR) Laboratory. The only operational PCR laboratory in Cox's Bazar, owned by PRANTI, has been assisted by PRICE-WFC since its inception. This quarter, the PCR lab tested over 400 samples from five hatcheries. Gazi Fish Ltd (GFL) also tests initial nauplii<sup>4</sup> and PL in its final stages through the PRANTI offices.



PCR test for virus contamination

#### Semi-intensive Shrimp Farming

Due to virus outbreaks in Bangladesh in 1997, the recovery of semi-intensive shrimp farming is still largely underway. Only two farms in Khulna practice high density shrimp farming and produce more than one crop per year. PRICE has developed a partnership this quarter with both semi-intensive farms--Gazi Fish Ltd, (GFL, second MOU), the largest semi-intensive farm, and S&M Shrimp Culture Ltd (SMSC, first MOU).

Gazi Fish Ltd. also produces screened PL for itself and sells additional screened PL to farmers in Khulna region. During the reported period, GFL produced approximately 15 million screened PL, of which 7.4 million are used at GFL and SMSC, with the rest being marketed to local farmers.

#### Popularization of Improved Dried Pellet Feeds

The use of supplemental feeds to shrimp is a relatively new development in Bangladesh aquaculture. PRICE is promoting the use of improved feed and its use among shrimp farmers, particularly since poor-quality supplemental feed decreases productivity, increases pollution, deteriorates soil and water health, makes health management of farming animals difficult, and lowers the feed conversion ratio (FCR) both in fish and shrimp. During this quarter, the project worked with one feed mill in the Khulna area, Satkhira Feed Mill, to cooperate on the production and marketing of quality grade aquaculture feed both for fish and shrimp.

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<sup>4</sup> Nauplii is the larval stage of a crustacean such as the brine shrimp. PRANTI is the only commercial PL testing lab in the country and is located in Cox's Bazar. GFL and its hatchery are located in Khulna. Therefore, throughout the larval rearing phases it is not possible for GFL to test different stages of larval metamorphosis, so they only test the first stage of larvae, the nauplii, and the post-larval stage.

### Improving Farmers' Backward Linkages for Tested Seed

PRICE is working with World Fish Centre under the GHERS initiative to popularize tested screened PL among the farmers as a first step towards producing virus and disease free shrimp. The initiative in Khulna region convinced farmers under the loop of GHERS for mandatory use of screened PL. GHERS initiative is confined to greater Khulna region, however, 25% of shrimp farming areas are in Cox's Bazar and during this quarter PRICE started working with two groups of shrimp farmers in Cox's Bazar totaling 700 farmers who have started using tested screen PL for the first time following an outgrowing scheme.

### Assisting Group Procurement and Sales

Through trainings and counseling, PRICE has informed target farmers of the benefits of group sales and group procurements, and facilitated these through contract growing efforts and through the GHERS initiative. To buy inputs from the market, the project taught farmers to use group procurement methods, which helped them purchase high-quality inputs at lower prices. Farmers were also linked to the sources of good quality inputs, like screened PL and hatchery PL, for traceable production.

### Export Promotion and Linkages to Foreign Buyers

Frozen Fish & Shrimp Processors and Exporters Group (FSPEG), an informal group of five PRICE partner enterprises from the Jessore-Khulna region that process and export fishery products, attended the 2011 GULFOOD exhibition in Dubai, UAE on a cost-sharing basis (29% of total cost borne by PRICE) through an MoU with PRICE. The aim was to diversify export markets beyond Western Europe and North America and focus on the Middle East where the popularity of seafood is reportedly increasing.



PRICE aqua partners at the GULFOOD Trade Fair in Dubai

The event greatly helped these five enterprises showcase their products, meet with international buyers, discuss preliminary agreement with diverse buyers, and thus obtain access to a new international market in the Middle East. PRICE is confident that this type of support to the partner members will help develop their capacity to produce frozen and value-added fish products based on the demand of the buyers in new areas. Before facilitating the participation to the fair, PRICE assisted the FSPEG members in food safety, bio-security measure in processing plants, diversification of value-added products and getting better access to markets.

### Improving Access to Finance for the Sake of Traceability

The emergence of shrimp auction houses is diverting some shrimp producers away from depots and the traditional supply chain of shrimps from farm to processing plants. PRICE is working with farmer groups and encouraging beneficiary members to maintain their relationships with depots for traceability. Due to the scarcity of raw material for processing plants, suppliers partially finance poor farmers with seeds, feed, lime, fertilizer, and occasionally “soft loans,” on the condition that farmers will pay them back by selling shrimp to them, usually at a discount. Applying this tradition of informal value chain financing, PRICE convinced depot owners to finance the cost of farmer’s inputs in shrimp production (feed, seed and fertilizer) through the contract growing systems.

### Initiative for Value-Added Product Development

The frozen foods export from Bangladesh are typically block or individual quick frozen (IQF) and do not have any significant value added products such as ready to cook or ready to eat products. Understandably, the value/price received by Bangladesh exporters for these products is far below the premium price received by other shrimp and prawn exporting countries. To assist partner processing plants to develop their capacity for value-added products, a consultant from USA was arranged through USAID’s “Farmer to Farmer Program”, managed by Winrock International, for two of PRICE’s processing plant partners, Organic Shrimps Export Ltd (OSEL) and Rupali Sea Foods Ltd. (RSFL), both located in Khulna. The consultant stayed with the processing plants for three weeks and worked closely with top and mid-level managements as well as technicians while executing his assigned job. Below are potential next steps and some feedback from the consultant on the status and potential of the value added products from those specific processing plants.

- *Assess current OSEL and RSFL processing of frozen foods and explore potential to utilize existing machineries to produce shrimp, prawn and fish value-added products.* The current machinery is sufficient for the producing the current line of valued-added products but will not work for snack items. The consultant recommended processing small and large fish and using the existing machines to add value where possible.



Counseling at Organic by Farmer to Farmer Consultant



Hands-on Training at Rupali Sea Foods

- *Examine the current practice of processing block frozen foods and recommend further improvement, as needed.* The factories’ processing procedures are fine, although the



processing flow as designed will not achieve more than a 75% efficiency rate. The factories lack efficient systems to process orders and the consultant discussed the problems with management and has made suggestions for improvement.

- *Evaluate the available raw materials, analyze cost-benefit and identify potential new products:* With factory running at 20-21% of the capacity, there is a high need to produce new value added products (VAP). The consultant has trained them on how to proceed.
- *Provide hands-on training to the host staff producing new products:* Seven new VAPs were created and were evaluated by a ten-member testing panel. The consultant determined that the processing plants are not currently ready to produce the VAPs, and will have to redesign the recipes to meet commercial sale standards and to be compatible with the processing machines.
- *Recommend and provide information for marketing new products:* The consultant conducted trainings on how to plan for introduction of VAP. The planning process includes a market feasibility study.
- *Assess hygiene and food safety issues and make recommendations for further improvement:* The host factories are very well maintained and very clean, but have problems with record keeping. The consultant has suggested closer supervision and introduction of a computer system. He also redesigned the quality assurance verification system which will improve efficiency.

#### Recommendations and follow-up activities

- **Stakeholders Skill Needs Analysis and Training:** Either Winrock or PRICE should consider conducting a business skill needs survey of stakeholders in this industry. The consultant believes that a focused approach will improve competitiveness, strengthen entrepreneurship, and reduce poverty.
- **One-on-One counseling:** Identify the weaker members in each stakeholder group and offer one-on-one counseling addressing specific needs.
- **Investigate possible technical as well as business management training for crab Cultivators.** Crab is an export commodity from Bangladesh and mostly collected /harvested from nature/wild. Recently, few farmers started crab farming in the country. Greater efforts should be made to include women in all stakeholder areas.

#### PRICE participates at a meeting at EU office Dhaka on food security and shrimp farming

On March 15, a meeting was held at EU office in Dhaka on food security and shrimp farming where different development partners including PRICE staffs attended. PRICE made a brief power point presentation to the meeting and described PRICE aquaculture activities that included both fish and shrimp and how PRICE aquaculture intervention and activities address food security issues besides fulfilling PRICE objectives. The PRICE attempt on integrated farming to provide family nutrition and family income generation and self-employment was appreciated in the meeting. Chief of Party and team leader aquaculture from PRICE attended the meeting and actively took part in discussion.



## QUANTITATIVE RESULTS

PRICE has provided technical assistance to train 22 EFs as master trainer to arrange backyard trainings to 10,785 farmers in 14 Upazilas in three districts. The comprehensive trainings to all 10,785 farmers will continue to coming months. All newly selected farmers received one or two backyard trainings during this quarter. Partners in shrimp subsector have increased their sales by \$14.8 million in this quarter. More than \$278,127 was invested in the period.

Achievements in Shrimp during Jan-Mar 2011	
<b>Sales increased</b>	<b>\$14.8 million</b>
<b>New jobs</b>	<b>4,109</b>
<b>Investment increased</b>	<b>\$278,127</b>
<b>Farmers trained in management</b>	<b>16</b>
<b>Trainee for workforce development</b>	<b>22</b>

### Partner-Wise Results in Shrimp: Oct-Dec 2010

Partner	Sales Increased (USD)			No. Total Jobs Created*			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
Gazi Fish Culture Ltd.	0	0	0	6	7	13	0
Din Bijoy Enterprise	0	16,667	16,667	1	0	1	0
Vairob Fish Agency	0	70,751	70,751	2	1	3	0
Razu Enterprise	0	29,425	29,425	(1)	0	(1)	0
Modina Fish	7,500	0	7,500	1	0	1	0
Mondal Fish	0	9,185	9,185	0	0	1	0
Satata Fish	0	35,510	35,510	1	(0)	1	0
Satkhira Feed	182,559	0	182,559	0	0	0	0
GHERS by WFC	184,440	2,878,440	3,062,880	3,909	255	4,164	278,127
Rupali Sea Foods Ltd.	0	239,755	239,755	0	18	18	0
Organic Shrimps Export Ltd.	0	4,592,190	4,592,190	(29)	11	(17)	0
Jahanabad Sea Foods Ltd.	0	2,937,255	2,937,255	19	(58)	(39)	0
Jalalabad Froozen Foods Ltd.	0	5,149,026	5,149,026	34	(72)	(38)	0
Mofa Fish Processing Ltd.	0	(1,358,895)	(1,358,895)	(2)	11	9	0
M.U Sea Foods Ltd.	0	(126,342)	(126,342)	(6)	(2)	(8)	0
<b>Total</b>	<b>374,499</b>	<b>14,472,967</b>	<b>14,847,466</b>	<b>3,937</b>	<b>172</b>	<b>4,109</b>	<b>278,127</b>

\*Jobs are calculated using job model to estimate the across the value chain results of job creation.

Source of data: Partner interviews and WFC

## LEATHER PRODUCTS SECTOR

Export of finished leather goods or fully value-added items continued to surpass the earnings from intermediary leather products, as evidenced in a report of the Export Promotion Bureau. Industry people said fast expansion of export-oriented footwear and fashion leather goods industries has pushed Bangladesh's leather industry into a new era. They indicated that even more expansion would occur as global importers are taking new interest in sourcing from Bangladesh. Many in the industry say that the leather goods export sector in Bangladesh could become worth a billion dollars and would emerge before long and flourish like the apparel industry.

Footwear shipments earned \$197 million in eight months of the current 2010-2011 fiscal year, growing more than 48 percent over the corresponding period of the last fiscal year. Exports of non-footwear fashion leather goods, like handbags, travel bags, purses, and belts etc, increased by 153 per cent in July-February of the current fiscal year to \$36.4 million. On the other had, leather shipments earned \$176 million in July-February, growing 35 percent year-on-year.

Industry insiders said growth in leather exports in term of volume remained slow but increased unit price in the global market kept the earnings growing. However, leather footwear and other finished leather goods shipments continued their increase in volume, as production capacity in these industries is growing quite fast. Industry people say EU and Japan have been the traditional market for Bangladeshi footwear industry, but huge demands are coming recently from USA, which is a new market destination for Bangladeshi footwear exporters.

Demand from earthquake-ravaged Japan might slow down in the coming months, but the industry sees that fresh demand from USA, EU and other markets may help to bridge the gap and are convenient for further expansion of the industry here.

An official of Bangladesh Leather Goods Manufacturers' and Exporters' Association told The New Age, an English language daily, that shipment of fashion leather goods like women hand bags and purses increased sharply in recent times.

‘Increasing number of western retailers, who are working on diversified sourcing, have spotted Bangladesh as a potential source of fashion leather products as some manufacturers here have put efforts in product development.’

During this reporting period (January-March, 2011), PRICE's strategic focus to support highest value added sectors i.e. footwear and non footwear goods continued. This period the major concentration was on SME development. PRICE helped SME footwear and goods producers to develop new business linkages, build their institutional capacity in the area of technology, management, compliance, etc.

PRICE also maintained its commitment to support the sector in addressing the shortage of skilled workers. PRICE facilitated mobilization of resources to make a private sector led one point service center (COEL) operational in collaboration with ILO. A MoU is expected to be signed between PRICE and COEL in April. COEL will eventually grow into a more comprehensive industry training organization; gradually take over the charge from the

association and PRICE for fulfilling the tasks of the ISCs, and build its capacity and roles to remain sustainable.

## **A. ASSISTANCE TO SME DEVELOPMENT**

### **PRICE Assisted SMEs in Learning Efficient and Cost Effective Production Techniques**

In 2010 PRICE facilitated an initiative called “process upgradation” with seven interested SMEs of the leather sector. The aim of the pilot was to show the sector stakeholders particularly the SMEs the better ways to reduce inefficiency from their production processes. As an initiative of disseminating and sharing the learning of the pilot “process upgradation” with various stakeholders particularly SMEs of the sector, PRICE organized a seminar called “Experience Sharing Seminar on Better Production Technique in SMEs of Leather Products Sector.”

The seminar aims to establish new business linkages and strengthen existing linkages between SMEs and the lead enterprises, and among SMEs. PRICE focused mainly on cost savings of materials, productivity improvement by job simplification, and introduced low cost simple machines during the pilot “process upgradation” program. The seminar included a review of the outcomes of the pilot project interventions, allowed SMEs to share their experiences and raise some critical issues with industry experts to get practical solutions to their production challenges. This networking initiative triggered the interest of Bata Shoe Company, which invited the potential small shoe makers who attended the seminar, to meet with a buyer-seller and explore subcontracting possibilities.



Participants at experience dissemination seminar

### **PRICE Supported SMEs in Participating at Dhaka International Trade Fair: A Market Linkage Opportunity for Small Enterprises**

PRICE supported ten SMEs (leather footwear and goods producers) to participate in the Dhaka International Trade Fair (DITF), held on January 1 -31, 2011. DTIF is one of the largest national events organized by the Export Promotion Bureau and supported by the Business Promotion Council and Ministry of Commerce to promote the businesses of small enterprises, particularly new ones. Its aim is to help SMEs gain exposure to potential markets by showcasing their products and therefore helping them develop new businesses linkages.

The two major constraints limiting Bangladesh's SME growth in the leather sector are lack of exposure to buyers and limited access to markets. In addition, due to limited information from buyers, manufacturers often find themselves producing goods that do not appeal to the public, limiting demand for their products.

PRICE and the participating SMEs rented a pavilion, at the fair, which they named "Leather Cave." A wide range of leather products, including footwear, were displayed by each SME for the entire month. PRICE supported these SMEs in developing products for the fair, helped them learn how to display merchandise to attract potential buyers, and helped them publish a product catalogue for potential clients. Most importantly, PRICE contacted and invited important corporate businesses to visit the Cave and explore opportunities for both parties to do business together in the future.



Leather Cave generated great interest among the visitors

As a result of the fair, the SMEs received a total of BDT 3,500,000 in revenue from spot retail sales. Five SMEs received business orders of more than BDT 2,000,000 during the month. In addition, the fair provided the SMEs with the opportunity to establish new business linkages with potential clients. Businesses such as pharmaceutical companies, electronic media, and fashion houses have already contacted the SMEs and have shown interest in purchasing their products.

#### PRICE Supported SMEs in Improving Management – Worker Relations



Team building between workers and owners of PRICE-assisted SMEs

PRICE facilitated a "Team Building" initiative of Leather Technologist SME Entrepreneur (LTSE) on February 27, 2011. The objective was to build a better relationship between owners and workers of PRICE-supported LTSE members and to motivate their workforce. This day long program included various team building games, member orientation, recognition of best performance as well as longest serving workers from each LTSE member enterprise. 125 people, including owners and workers, attended the

program and representatives from BLSC and Janata Bank attended the workshop as guests.

#### *PRICE Signs Agreement with Well Known NGO to Improve Wood Handicraft Production*

Rishilpi is a nonprofit, nongovernmental development organization in the southwest of Bangladesh. It was founded to improve the lives of the "untouchable" Rishi caste. In addition to income generation, Rishilpi conducts relief and development work in rural Bangladesh communities, providing education sponsorships, health care, micro-credit savings programs, and early marriage prevention support for adolescent girls. Rishilpi assists more than 1,580 artisans, mostly widows and abandoned rural women, to make and market crafts through Rishilpi Handicrafts. All the producers have a share in the revenue earned by selling Rishilpi products as wages and dividend.



MoU signing between Rishilpi and PRICE

PRICE and Rishilpi Handicrafts signed an MoU in January 2011 to help develop and enhance the skills of the Rishi community and other marginalized people who are already engaged or want to be engaged in the production of leather products. This program will aim to improve the living standard of the Rishi community and other marginalized people by teaching them better manufacturing techniques to increase productivity and to link their efforts with the market to generate more sales, thus creating new job opportunities. The first program is expected to start in May 2011.

#### *PRICE Launches New Initiative of Creating Service Providers for Sustainable Long-Term Workforce Development in the Leather Products Sector*

PRICE in collaboration with International Labor Organization (ILO) and Centre of excellence for Leather (COEL) starts a new initiative of creating a one stop service centre for sustainable long term workforce development in the leather products sector.

Understanding the importance and benefits of these OJT initiatives, the industry representatives that formed the Leather Industry Skill Council (ISC) under the supervision of ILO decided to establish a sector specific skill center called COEL, for long term sustainability. ISC believes that COEL will ultimately take over the responsibility from PRICE and the Association for developing skills of workers on a regular basis to respond to this sector constraint. As such, under the MoU with COEL, PRICE commits to contribute to COEL's apprenticeship program by providing technical assistance to train approximately 1000 individuals as machine operators, who will then be employed in the footwear and leather goods sub-sectors.

The purpose is not only to support the training of the workers and job generation, but also to help make COEL operational as a one point resource centre as well as service provider of



relevant sector information, workforce development, product development, laboratory for testing of raw and finished materials etc. in the leather sector.

## **B. ASSISTANCE FOR WORKFORCE DEVELOPMENT**

### **PRICE-Bengal Workforce Development Program in Full Swing**

This new tripartite skill development program between PRICE, Leather Goods & Footwear Manufacturers & Exporters Association of Bangladesh (LFMEAB), and Bengal Shoe Industries Ltd. (BSIL) is in full swing. The aim is to develop the skills of 1,200 new workers in 12 month and to create job opportunities for them in the footwear sector. Each trainee has been receiving two-month long formal “on the job” training on cutting and/sewing-prefabricating and/lasting. Every month a group of 150-200 trainees are accepted into the program.

From the first group, 145 of 157 participants completed the training successfully and 142 (111 women) joined BSIL in February 2011. These 142 trained workers started trial production of footwear that will be exported to Italy. The employment of 142 local youth at the shoe factory has created a lot of enthusiasm for work apart from agriculture and trade.

### **PRICE-Apex Cooperation Renewed for Development of 1200 New Workers**

The first phase of workforce development program resulting from a tripartite agreement between LFMEAB, Apex Adelchi Footwear Ltd (AAFL) and PRICE ended in January 2011. The program aimed to address the prevailing shortage of skilled workers in the footwear/goods industry, which has hindered the growth of the leather sector and exports. At the end of the program, 680 new workers were successfully trained in cutting, sewing, and lasting. AAFL alone hired 560 of the newly trained workers, while the rest are reportedly employed in other footwear companies such as Blue Ocean, Gallerie Apex, Bay, and Land Mark Footwear. This initiative helped the footwear sector increase its production and export sale, which is reflected in a 20% increase in business last year at AAFL alone. AAFL is taking advantage of the opportunity that the global recession has created for Bangladeshi manufacturers to capture a larger portion of the export market by seeking more skilled workers. LFMEAB and AAFL have requested that PRICE provide another phase of training for a new group of 1,200 trainees, and the agreement was subsequently signed in February 2011.

These 1,200 new workers will be trained in five to six groups over the course of 12 months, with modules developed by PRICE on topics including industry safety, discipline, and the basics of shoe engineering. The cutting department workers will be trained on cutting direction, pairing, and machine pressure; sewing workers will be trained on skiving, splitting, folding, edge finishing, thread, needle, and machine adjustment; and, lasting workers will be trained on toe and heel lasting, machine adjustment, and finishing chemicals.

At the end of the program, it is expected that these 1,200 workers will be gainfully employed and annual sector sales will total approximately USD 10 million.

### **PRICE-PICARD Initiative Supports Goods Sector to Get More Semiskilled Workers**

PRICE’s initial “on the job training” intervention was met by high drop out rates. The aim of this 12-month on-the-job training program is to train 600 new workers to develop their skills,

generate employment, and increase production and sales in the sector. This is the first initiative that PRICE took in the leather goods sector in collaboration with PICARD Bangladesh Ltd. (PBL) and LFMEAB. Each batch (30-50 new workers) is trained for two months under the supervision of four highly experienced PBL staffs in association with a PRICE STA trainee trainer. The training areas were customized to goods industry demand to concentrate heavily in manual operations including manual stitching, perforating, cementing, trimming, finishing in addition to other regular activities i.e. machine cutting, sewing.

Due to the high drop out rates, PRICE has worked with PICARD Bangladesh since November 2010 to counter this challenge. Together, they designed a new program that included an orientation (briefing on PRICE, training pattern, sector overview, future prospects, upcoming factory visits) for the new trainees. By providing the participants with an understanding of future prospects and program objectives, their motivation increased and the drop out rate decreased.

So far 140 workers have completed the training and as of February 2011, 92 (M-45, F-47) have already joined PICARD.

#### *Workforce Development with Bay Footwear Ltd.*

Targeting 200 new workers to be trained on cutting and/sewing and/lasting through this two-month training initiative, the first 100 participants (M-33, F-67) already completed and joined Bay Footwear by January 2011 and have been contributing to enhancing its production and sales. The second group of 100 participants (M-38, F-62) will complete their training by April 2011.

#### *Workforce Development with Apex Leather Craft & Footwear Ltd (ALFAL)*

This skill development program with LFMEAB and ALFAL that began in November 2010, targeting 200 new workers to learn to make leather goods will end in the next quarter. One-hundred workers have already completed their training and 50 of these workers (M-10, F-40) have joined ALFAL and the next 50 will join in early April 2011. Each trainee received two months of formal “on the job” training on cutting and/sewing-prefabricating and/assembling at the ALFAL factory. The training program is supervised by the PRICE STA Lead Trainer using the modules compiled/developed by PRICE program specifically for these kinds of training.

#### *Workforce Development with FB Footwear Ltd.- Ended*

The workforce skill training program under the tripartite agreement between PRICE, LFMEAB and FB Footwear Ltd (FFL) ended in February 2011. Started in July 2010, the aim of the program was to develop the skills of 1,000 new workers in making footwear and to create job opportunities for them. Of the successfully completed trainees, 561 (M- 224, F- 337) have already joined FFL and the rest are working at other companies such as Blue Ocean and MAF Shoes, thereby contributing to the expansion of sector export business.

## C. OTHER SECTOR DEVELOPMENT INITIATIVES

### Awareness Building Initiative on Compliance

PRICE facilitated an awareness raising initiative taken by the LFMEAB and the Leather sector Business Promotion Council (LSBPC) on compliance issues, particularly on product standardization and environmental compliance. A seminar was organized as a part of this initiative on January 31, 2011. The Secretary, Ministry of Commerce was the chief guest of the program. Seventy-five participants from about 35 organizations attended the seminar, which presented the likely consequences of incompliance and encouraged industry stakeholders to proactively address compliance issues. Two experts from PRICE assisted the organizers in preparing presentations on these issues. In addition, PRICE played an instrumental role in providing SMEs with the opportunity to present their upcoming challenges. As a result of this initiative and PRICE's continuous effort, LFMEAB executive committee members are now more aware of these small producers and showed an interest in exploring opportunities to include SMEs as associate members on special consideration.



PRICE assisted SMEs presenting on compliance seminar

## D. QUANTITATIVE RESULTS

Partners in Leather products sector increased their sales by USD 5.3 million. 99 percent of Leather Products sector partners' increased sales were for export purpose. Apex Adelchi Footwear increased their sales by USD 1.3 million and FB Footwear increased sales by USD 2.4 million. LTSE members increased sales by USD 59 thousand in this period. 693 jobs were created by the partners in the sector, the highest number of jobs created by Apex Adelchi and Bengal Shoes. Bengal Shoes contributed for the increase in investment in this quarter.

### **Achievements in Leather Products during Jan-Mar 2011**

<b>Sales increased</b>	<b>\$5.3 million</b>
<b>New jobs</b>	<b>693</b>
<b>Investment increased</b>	<b>\$100,000</b>
<b>Firms trained in technology</b>	<b>26</b>
<b>Firms trained in management</b>	<b>26</b>
<b>Training for workforce development</b>	<b>770</b>

## Partner-wise Results in Leather Products

Partner	Sales Increased (USD)			No. Total Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
<b>LFMEAB</b>	<b>4,097</b>	<b>5,216,438</b>	<b>5,220,535</b>	<b>215</b>	<b>478</b>	<b>693</b>	<b>100,000</b>
Apex Adelchi Footwear	-	1,260,000	<b>1,260,000</b>	81	155	<b>236</b>	-
Bay Footwear	-	225,000	<b>225,000</b>	33	67	<b>100</b>	-
Jennys Shoes	-	205,875	<b>205,875</b>	-	-	-	-
Landmark	-	900,000	<b>900,000</b>	-	-	-	-
Apex L/R Craft	4,097	60,000	<b>64,097</b>	10	40	<b>50</b>	-
PICARD	-	164,000	<b>164,000</b>	45	47	<b>92</b>	-
Bengal Shoe Industry Ltd	-	-	-	31	111	<b>142</b>	100,000
FB Footwear	-	2,401,563	<b>2,401,563</b>	15	58	<b>73</b>	-
<b>LTSE</b>	<b>56,717</b>	-	<b>56,717</b>	-	-	-	-
BAG	5,208	0	<b>5,208</b>			-	-
KARIGAR	2,343		<b>2,343</b>			-	-
Sassy	11,063	0	<b>11,063</b>	-	-	-	-
Touch International	-		-				
3 Tech	9,381		<b>9,381</b>	-	-	-	-
Hammer	7,001		<b>7,001</b>	-	-	-	-
SAAuthentic	5,734		<b>5,734</b>	-	-	-	-
Axis Leather Craft	3,488		<b>3,488</b>	-	-	-	-
Cicada	-		-	-	-	-	-
Superfit Ltd	5,444		<b>5,444</b>				-
Duce	7,055		<b>7,055</b>				-
<b>Total</b>	<b>60,814</b>	<b>5,216,438</b>	<b>5,277,252</b>	<b>215</b>	<b>478</b>	<b>693</b>	<b>100,000</b>

Source of data: Partner interviews

## **Equity Integration**

PRICE has worked to improve the skills of women in all three sectors. Focusing on value chain setbacks, PRICE has worked to alleviate hindrances to the female workforce in Bangladesh. In this effort, PRICE attempts to create a more competitive business environment working with firms to build awareness of issues surrounding women's participation in these sectors.

For example, to achieve the goal of including 20% women among 60,000 aquaculture beneficiaries in the project, PRICE signed a second MOU with Jana Sheba Kendra (JSK), a women-dominated farmer group and NGO. PRICE also signed an MOU with Polli-Bodhu Kallan Sanghtha (PBKS), an association organized and operated by housewives to train hundreds of housewives in homestead aquaculture, focusing on increased household income, self-employment, income generation, family nutrition, food security and women empowerment.

Furthermore, during this quarter, a total of 3,100 farmers were trained under improved technology, management and workforce development in the aquaculture sector, of which 1,567 were female participants. PRICE also facilitated a two day-long in-country study trip for a beneficiary farming group of Ma Fatema Hatchery Ltd, and Rupali Hatchery from Jessore to Mymensing region. Seven of the 20 members of the in-country study trip were women, who had participated in a study trip for the first time. They visited Brahmaputra hatchery and an intensive fish farm under TFFS (Trisal Fish Farming Somity).

PRICE also aimed to target women beneficiaries in the horticulture sector. PRICE facilitated trainings for 760 women in collaboration with PRIDE Agro Enterprise, Golden Seed Processing Farm, Ankur Seed and Himagar and Technology for Rural Development (TFRD). The trainings focused on potato and eggplant production management, and post-harvest handling, allowing them to be involved in potato and eggplant production management and post-harvest handling activities. Yard meetings on the use of organic fertilizer were organized for women participants to ensure quality vegetable cultivation and adopt contract farming system.

In the leather sector, PRICE has been supporting women through its various programs, such as workforce skill (technical and managerial) development and SMEs development. In this quarter, PRICE trained 770 workers of which 599 (67%) were women. PRICE facilitated job creation for a total of 693 workers, of which 478 were women, and has helped women develop business linkages with lead firms, obtain access to finance, upgrade process/operations, attend exposure visits, and participate in lead auditor courses abroad. These female workers are improving their standard of living by having the opportunity to work daily and generate consistent income.

### **Gender and Development Fair 2011**

PRICE participated in the Gender and Development Fair, organized by USAID in Dhaka from March 14 to 15, 2011. USAID/PRICE, along with 95 other development and government organizations, participated in the two-day fair. PRICE informed visitors of PRICE's support of women by:





Dr. Shirin Sharmin Choudhury, Honorable State Minister, Ministry of Women and Children Affairs visited the USAID-PRICE booth.

- 1) Distributing approximately 300 folders, which included a section on “Empowerment of Women through Economic Growth,” and objectives, achievements and progress of the project
- 2) Showing a video documentary for the general audience
- 3) Distributing women-based success stories
- 4) Providing on the spot consultation with visitors to inform them about PRICE initiatives in empowerment of women through economic growth sector targets in aquaculture, horticulture and leather products.

In addition, the leather products sector demonstrated leather goods production techniques with the help of one female worker and one female entrepreneur who had received PRICE training. Women producers, entrepreneurs, government officials, the media, international and national development organization stakeholders, and Dr. Shirin Sharmin Choudhury, Honorable State Minister of the Ministry of Women and Children Affairs, visited the PRICE stall. Visitors expressed their enthusiasm and appreciation for PRICE’s efforts to promote gender equity in all the three sectors.

## SPECIAL EVENTS

### PRICE Participates in America Week



The US Ambassador and the USAID Mission Director in Moshni village talking to farmers participating in the GHERS initiative

PRICE participated in America week, organized by USAID in Khulna district from January 24 to 26, 2011. The event was inaugurated by the honorable U.S. Ambassador, his Excellency Mr. James F. Moriarty. The Mission Director, Ms. Denise Rollins was also present at the inaugural ceremony. Twenty six USAID-funded projects in Bangladesh participated in the event. PRICE displayed publications and production materials for the horticulture, aquaculture, and leather products sectors.

The aquaculture sector displayed a model of its GHERS initiative with the World Fish Center (WFC), highlighting its environmentally friendly, integrated shrimp farming approach as an example of good

aquaculture practices. The horticulture sector organized a display of a tissue culture net house for virus-free potato breeder seed production techniques. The leather products sector demonstrated efficient and compliant footwear production techniques with the help of two workers from PRICE-assisted SMEs, who delighted the public by producing leather sandals on the spot.

The USAID Mission Director visited the PRICE stall, discussing PRICE interventions and expressing appreciation for the efforts. PRICE also had a project presentation for a more general audience that was attended by approximately 100 visitors. America Week provided a good opportunity for PRICE to expand its profile and highlight the project's interventions and impact.

On 26 January, the honorable U.S. Ambassador to Bangladesh visited Moshni village, Bagerhat, one of the localities where PRICE and World Fish Center are implementing the GHERS Initiative. Ambassador Moriarty was accompanied by Ms. Rollins and other Embassy and Mission staff. The visiting team appreciated the integrated farming approach that helps provide food security, family nutrition, income generation, employment, and food items for domestic consumption and for export.



Denise Rollins, Mission Director, at the PRICE stall during America Week

The team observed the harvesting of fish, prawn and shrimp, and also took part in a discussions with farmers, housewives and other members of the farming families. Ms. Rollins encouraged women participants to engage themselves in their husbands' farm based rural economic activities. As a consequence of this encouragement, the locals, on the spot, formed a new group of women farmers.

### PRICE Redesigns and Launches its Website



In March 2011, redesigned PRICE website was launched with a new look and new content. At present the website contains new stories, highlights, activities, events, publications and many more covering all three sectors. The website address is as follows: [www.price-bd.com](http://www.price-bd.com)

### PRICE Publishes Second Issue of its Newsletter

PRICE published the second issue of its newsletter. The newsletter covered a lead story on the PRICE support to the leather sector SMEs through the Dhaka International Trade Fair. The newsletter also features sector highlights and many other stories. The electronic version of the newsletter has been circulated to a wider audience covering PRICE stakeholders in all the three sectors. Later, the E-version (of the newsletter) was uploaded in the PRICE website. The link is as follows:

<http://price-bd.com/wp-content/uploads/PRICE-Newsletter-II-January-March-2011.pdf>



## Annex 1: PRICE Performance: Jan-Mar 2011 and Accumulated

Indicator & Sector	Unit	Life of Project Target	Jan-Mar 2011 Performance			Cumulative Performance		
			Target	Achievement	% of achievement	Cumulative planned	Cumulative achieved*	% of Achievement of LoP Target
<b>Total Value of Sales Increased</b>	<b>USD</b>	<b>200,000,000</b>	<b>13,969,400</b>	<b>31,513,789</b>	<b>226%</b>	<b>82,000,700</b>	<b>97,817,205</b>	<b>49%</b>
Domestic		116,994,616	7,492,440	11,411,546	152%	37,673,070	56,109,628	48%
Export		83,005,383	6,476,960	20,102,243	310%	44,327,630	41,707,577	50%
Aquaculture		105,000,000	7,000,000	23,293,167	333%	51,125,000	70,889,379	68%
Horticulture		40,000,000	2,230,000	2,943,370	132%	13,630,000	11,770,084	29%
Leather/Leather products		55,000,000	4,739,400	5,277,252	111%	17,245,700	15,157,742	28%
<b>Number of Full-time equivalent Jobs Created</b>	<b>Number</b>	<b>40,000</b>	<b>3,270</b>	<b>6,719</b>	<b>205%</b>	<b>21,310</b>	<b>21,575</b>	<b>54%</b>
Aquaculture		26,000	2,000	3,837	192%	13,750	13,817	53%
Horticulture		10,500	800	2,190	274%	5,350	5,248	50%
Leather/Leather products		3,500	470	693	147%	2,210	2,509	72%
Male		34,383	2,672	3,525	132%	15,779	16,318	47%
Female		5,617	598	3,194	534%	5,531	5,256	94%
<b>Total Value of Investment Increased</b>	<b>USD</b>	<b>4,000,000</b>	<b>300,000</b>	<b>975,575</b>	<b>325%</b>	<b>2,200,000</b>	<b>4,801,772</b>	<b>120%</b>
Aquaculture		2,100,000	100,000	772,402	772%	1,000,000	3,442,978	164%
Horticulture		1,000,000	100,000	103,173	103%	520,000	602,587	60%
Leather/Leather products		900,000	100,000	100,000	100%	680,000	756,208	84%
<b>Number of persons participated in WF-dev program</b>	<b>Number</b>	<b>15,000</b>	<b>1,800</b>	<b>2,042</b>	<b>113%</b>	<b>9,600</b>	<b>9,638</b>	<b>64%</b>
Aquaculture		4,000	500	22	4%	2,757	3,479	87%
Horticulture		2,500	300	1,250	417%	1,830	1,366	55%
Leather/Leather products		8,500	1,000	770	77%	5,014	4,793	56%
Male		8,042	1,080	683	63%	6,320	3,393	42%
Female		6,959	720	1,359	189%	3,280	6,246	90%
<b>No. of workers and managers trained on Bangladesh Labor Law 2006</b>	<b>Number</b>	<b>1,064</b>	<b>115</b>	<b>-</b>	<b>0%</b>	<b>455</b>	<b>364</b>	<b>34%</b>
Aquaculture		1,064	115	-	0%	455	364	34%
Horticulture		0	-	-	-	-	-	-
Leather/Leather products		0	-	-	-	-	-	-
Male		732	81	-	0%	319	242	33%
Female		332	35	-	0%	137	122	37%

<b>Number of Firms and farmers receiving USG assistance to improve management Practices</b>	<b>Number</b>	<b>31,300</b>	<b>3,510</b>	<b>4,958</b>	<b>141%</b>	<b>10,770</b>	<b>19,106</b>	<b>61%</b>
Aquaculture		26,047	3,000	3,116	104%	9,375	15,251	59%
Horticulture		5,053	500	1,816	363%	1,281	3,782	75%
Leather/Leather products		200	10	26	260%	114	73	37%
Male		24,519	2,808	3,390	121%	8,241	14,626	60%
Female		6,781	702	1,568	223%	2,529	4,480	66%
<b>Number of Firms and farmers receiving USG assistance to access formal loan or micro-credit</b>	<b>Number</b>	<b>7,025</b>	<b>601</b>	<b>3,041</b>	<b>506%</b>	<b>1,553</b>	<b>5,722</b>	<b>81%</b>
Aquaculture		4,110	400	341	85%	1,108	1,978	48%
Horticulture		2,900	200	2,700	1350%	433	3,737	129%
Leather/Leather products		15	1	-	0%	11	7	47%
Male		3,502	301	2,845	947%	877	4,090	117%
Female		3,525	301	196	65%	677	1,632	46%
<b>Number of firms and farmers receiving USG assistance to invest in improved technologies</b>	<b>Number</b>	<b>72,300</b>	<b>6,540</b>	<b>4,382</b>	<b>67%</b>	<b>21,800</b>	<b>42,673</b>	<b>59%</b>
Aquaculture		58,600	5,500	1,300	24%	17,938	33,126	57%
Horticulture		13,512	1,000	3,056	308%	3,722	9,494	70%
Leather/Leather products		188	40	26	65%	141	53	28%
Male		60,880	5,559	3,927	71%	17,593	35,857	59%
Female		11,420	981	455	46%	4,208	6,816	60%

\* Oct-Dec'11 period data has been corrected after verification (only first three indicators changed slightly).

**Source of data:** Partner interviews for enterprises. In the case of farmer groups, small sample surveys for quarterly performance and statistical sample surveys for annual performance. GHERS information is reported by World Fish Center. Direct job information is complemented using a statistical model to estimate associated job creation across the value chain (see Annex 2).



## ANNEX 2

### Performance Management Plan

The M&E system is the basis for quarterly and annual reports to USAID. The PRICE team collects and analyzes performance information regularly; PRICE not only collects performance and impact data; it adds value to the raw data by performing appropriate analysis and providing context for data interpretation, thereby transforming raw data into useful information. Results from the analyses help determine whether adjustments to the project implementation plan are required. Finally, this information is conveyed to relevant internal and external parties through communications (i.e. knowledge sharing) and achieves impact as knowledge is acted upon. An understanding and agreement among all stakeholders of the project is developed to establish an effective performance management plan. All of them are the users of the system.

#### a. Features of the System

The M&E system is designed to involve all technical team members and project counterparts. This approach has several benefits.

*Efficiency.* Because technical team members and counterparts have first-hand knowledge of their activities and resulting impacts, they are best suited to efficiently collect and verify basic M&E data in their respective technical areas.

*Ownership.* By being involved in project M&E efforts, technical team members can ensure that the information generated is relevant and consistent with the interests of the project while our counterparts will see the demonstrated success of reforms.

*Feedback.* Having collected and analyzed M&E information, technical team members and counterparts are aware of project progress and will be able to use M&E information to guide project implementation.

The project M&E is responsible for organizing data collection. They ensure that project team members have the necessary tools to collect data and that they collect it consistently and at the appropriate frequency. They verify data quality and analyze and report trends. Annually, they review the appropriateness of the PMP and make necessary additions or adjustments to the existing indicators. The COP/DCOP supervises the overall M&E system. The technical area specialists are responsible for managing the process of primary data collection and entry in their respective technical areas. They then use the information to make management decisions about implementation activities. These technical specialists communicate progress to PRICE counterparts informally during the course of technical assistance and formally in quarterly reports to help them make decisions about necessary and priority interventions.

PRICE collects basic M&E data from the various administrative and technical records of the project, specially-designed surveys, and focus groups. PRICE also consults records, statistics, surveys, and databases maintained by the Government of Bangladesh (GOB), USAID, other donors, and NGOs as additional sources of data. There must be a balance between M&E data collection and technical work. Our M&E system is designed to allow the efficient collection of data by project staff or counterparts.

## **b. The Indicators**

The basic premise of the project is that true poverty reduction is about ensuring decent, sustainable jobs for vulnerable groups, with such jobs arising from increases in sales and investment across value chains in response to market demand. Indeed, the PRICE contract stipulates that sales, job, and investment increases are the essential project performance targets. As such, the focus of PRICE performance indicators is on sales, jobs, and investment—particularly for the benefit of women, young adults, and SMEs—to achieve equitable growth. These are the performance indicators for the overall strategic objective. All performance indicators have specific targets for the life of the project.

PRICE also uses tracking indicators that allow the project to track other aspects of its work and to support requirements for overall USAID reporting. For example, tracking indicators include disaggregation of performance indicators by gender, age, sector, region, exports, and SMEs. These indicators also track the number of SMEs receiving PRICE assistance and financing, training metrics, and other measures.

PRICE primarily collects data on performance and tracking indicators relevant to activities directly implemented by the project in collaboration with counterparts. This principle of “manageable interest” helps ensure that the results reported by PRICE’s M&E system are within the project’s ability to influence, particularly at the KRA level. Through these performance and tracking indicators, PRICE is able to accomplish the following:

- Capture and communicate major project impacts
- Track implementation progress against targets
- Supply information concerning major PRICE activities
- Identify problems constraining performance and resolution
- Contribute to USAID’s own performance management and reporting needs

Performance of the project and of the three sectors (Aquaculture, Leather and Horticulture) has been measured using eight defined indicators so far. Two types of indicators have been used to monitor PRICE’s contribution to (1) assessment of the impact of PRICE’s interventions and (2) key indicators of the global U.S. Foreign Assistance Framework. The first category is called custom indicators and the second is called common indicators. *Custom* indicators assess impact or outcome of the project interventions. *Common* indicators are used to report on PRICE’s contribution to the global results of priority program areas of the U.S. Foreign Assistance Framework. All these indicators are measured quarterly or annually throughout implementation in order to evaluate progress towards targets agreed with USAID.

While the indicators included below are intended to be reported on over the life of the project, it is likely that adjustments will be necessary over time. Annually, PRICE reviews the PMP in coordination with USAID and other counterparts, and modify indicators as necessary.

### **Critical Assumptions**

In designing the PRICE M&E system, PRICE focused on indicators within the manageable interest of the activity. This approach allows the project to measure impacts that can, to a

large extent, be attributed to the project. The project's ability to demonstrate improvement in these measures is based on the following assumptions:

- Absence of sociopolitical instability
- No major agro-climatic shocks during the project period. These include major climatic shock such drought, floods and other weather hazards.
- Generally stable fiscal and monetary policy
- Willingness of project counterparts and beneficiaries to carefully consider and implement project recommendations
- Access to available statistics and cooperation in conducting surveys

### ***Custom Indicators***

PRICE has used five custom indicators and three common indicators. The custom indicators are:

- i. Indicator 1: Total value of sales increased:  
Justification: Economic activities are largely measured by the creation of sales. It is the aggregation of the increase in total value of gross sales of assisted firms that can be attributed to PRICE activities. It is calculated in United States dollars and disaggregated by domestic and export sales.
- ii. Indicator 2: Total number of full-time jobs created:  
Justification: True poverty reduction means having a decent job with jobs arising from increases in sales and investment across the value chains in response to market demand.  
Full-time equivalent jobs will be defined as those equal to 260 work-days per year for non- agricultural production and 150 days for agricultural production (given the seasonality associated with agriculture work). Only new jobs will count, calculated by taking the total number of work days and dividing by 260 or 150, as appropriate. A new job will be attributed to the year in which the job originated.
- iii. Indicator 3: Total value of investment increased:  
Justification: Economic activities are largely measured by increased investment. It is the aggregation of the increase in the total value of investment of assisted firms that can be attributed to PRICE activities. Investment will include loan and private equity. It is calculated in United States dollars and disaggregated by domestic and export sales.
- iv. Indicator 4: Number of persons participating in USAID workforce development programs:  
Justification & Management Utility: This indicator measures the number of individuals who enrolled in USG-funded workforce development programs. It is assumed that increased access to quality programs will result in a more skilled, adaptable workforce.  
It will give the number of persons participating in USG-funded workforce development programs including, technical and vocational programs and workforce readiness programs.
- v. Indicator 5: Number of staff (workers and managers) trained on key issues of Bangladesh Labor Law 2006\*:  
It will give the number of persons (workers and managers) participating in USG-funded training programs on key issues of Bangladesh Labor Law 2006.  
\*It has replaced an older one upon consultation with USAID.

## **Common Indicators**

The common indicators are as follows:

- i. Indicator 1: Number of firms receiving USG assistance to improve management practices:  
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by adopting improved management practices.  
This indicator measures the number of firms that receive USG assistance to improve their management practices (financial management, strategic planning, marketing, etc.).
- ii. Indicator 2: Number of MSMEs receiving USG-supported assistance to access bank loans or private equity:  
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by accessing capital and increasing investment in productive assets.  
Number of MSMEs who are receiving assistance from USG supported sources to obtain bank loans or private properties.
- iii. Indicator 3: Number of firms receiving USG assistance to invest in improved technologies:  
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by investing in new technologies.  
It is the number of MSMEs who are receiving USG assistance.

Indicator reference sheets have been prepared for each indicator in order to provide more detail on indicator definition, units of measure, justification, data collection, and where possible, proposed targets.

### **c. Use of Case Studies**

In some cases, case studies are used to provide deeper understanding of progress or to complement data collected by M&E. However, this should not be confused with the qualitative indicators. This is a very subjective approach and presents a plausible case that progress is being made by using illustrative examples. This is not used as substitute to the other precise measures. Case studies are being prepared by the Communication personnel of the project, under direct supervision of COP. Sector Team Leaders and others can come up with the idea of any seemingly interesting cases being observed within the boundary of Project activities and the resulting impacts. Four types of case studies are prepared: case study, success story, first person story and, photo story. Usually 12 case studies are prepared each year which are submitted to USAID with quarterly and annual reports and then uploaded in the PRICE website.

### **d. Source of Data**

#### **Secondary Source of Data**

PRICE M&E uses both primary and secondary sources of information to measure the indicators. Secondary sources can be a range of organizations including the government of Bangladesh (e.g. ministries), EPB (Export Promotion Bureau), DoF (Department of Fisheries), business associations, international organizations such as the World Bank, United

Nations, universities, commercial firms and implementing partners like BSFF, BFFEA etc. Data is collected in regular intervals or based on need and a database is maintained for that. This is used for analyzing industry trend, project and sector performance etc.

### **Primary Source of Data**

Primary sources of data are the partners or the beneficiaries themselves. For the three custom indicators (increase in sales, creation of jobs and increase in investment), the source of information is the partners or beneficiaries themselves. PRICE collects data from them directly. PRICE has contract-bound targets in these three indicators. For custom indicator 4 & 5 and common indicator 1 & 3, data is taken from the quarterly training reports produced by the project Training Specialist, and adjusted for the indicators' requirement. Such adjustments include ignoring double-counting when one MSME has received training twice in the same category of assistance, i.e. improved management practices. For common indicator 2 (assistance to access bank loans or private equity), data is collected by regular monitoring of the partner. Sample survey method is not used for this indicator because the extrapolation of survey results might contain high sampling error.

### **e. Baselines**

Baseline is the value of an indicator before the commencement of activities, used for comparison when measuring progress toward a result. Baseline periods are taken as one year right before the impacts are expected on the partners. For the three custom indicators (increase in sales, creation of jobs and increase in investment), PRICE technical team collects baseline information during the process of making MoUs or growth plans with the partners. However, the quality of data collected at that time may not be the optimal because the technical team has only initial idea about the partner at that point. So the data collected during the MoU process needs to be adjusted sometimes. For the producer groups or associations or cooperatives with hundreds of farmers, baseline data is collected during the first training sessions conducted for the farmers. The hired consultants as well as the technical team members present in the training sessions collect the data from the partners in an organized way.

### **f. Data Collection Tools**

#### **Data Elements**

Many of the project's proposed indicators are aggregate indicators, made up of various data elements. M&E works with each technical team and counterpart to design database spreadsheets, forms, and surveys to capture and manage these data elements.

#### **Tools**

Formats for data collection have been designed by the PRICE M&E taking suggestions from the technical team. From time to time, these have been modified to fit the project requirement. PRICE uses M&E-designed formats to collect data on the first three custom indicators (increase in sales, creation of jobs and increase in investment) based on the different types, sources and methods of data collection. Detailed guidelines are attached with each format. All filled out data forms are signed by the interviewees and the interviewers.



There are other indicators which are related to training or assistance provided by PRICE. Quarterly Training Reports generated by the PRICE Training personnel is the source of information in this case.

#### **g. Methods of Data Collection**

For the three custom indicators (increase in sales, creation of jobs and increase in investment), performance of the partners is collected quarterly from the partners after the baseline period ends. The quarters are calendar quarters. Baseline and quarterly performance data are collected in two ways: partner interview, and, sample survey.

The first method (partner interview) is suitable for the individual SMEs PRICE is working with. As the name suggests, the source of information for this method is the partner or client with whom the project is working with. The approach is to proceed in a way of discussion with the partner enterprise and lead the discussion according to the need for information on performance. The partner might recall the information from memory or might check relevant business records for providing the information. Format for recording the gathered information were designed by the M&E. The interviews are conducted by taking assistance from the PRICE technical team who have contact with partner enterprises and thus can easily collect data from them ensuring the quality of data.

The second method for data collection, sample survey, has been used because in some cases performance data on sales, jobs and investment was not readily available from the partners. Those partners do not have any organized way of keeping records on parameters like sales, jobs or investment. Thus to collect data from those partners such as fish farmers' associations who have large number of members (from 60 to 900), sample survey method has been used. The source of information in this case are the beneficiaries of the interventions, i.e. the members of the associations etc. These surveys can be of two types: a) with statistically viable sample size, b) with a minimum sample size of 30 or larger (to approach to normal distribution).

For type a survey, statistically viable sample size is calculated beforehand considering the character of population to be surveyed. Professional survey teams work for data collection after taking detailed briefing on the project and process of data collection from the PRICE technical and M&E teams. Formats for data collection are provided by PRICE M&E. Sample points are selected at random. However, the cost and time required for conducting this type of survey for each partner with combined body of micro enterprises were considered huge to be conducted quarterly. Thus it has been decided that from now on PRICE will conduct this type of full-fledged surveys only annually, at the end of US fiscal year, September.

For type b survey, a minimum sample size of 30 or larger is taken. Statistical viability behind such decision is that when the sample size is greater than 30, the distribution approaches normal distribution. Also the homogeneity in the population (similar type of land, weather, availability of inputs, market linkage, sharing of knowledge etc.) is considered here. For the quarterly reports, these types of small surveys are conducted from now on. However, these quarterly survey results are verified during the later annual survey.

#### **Data Collection by Third-Party**

If necessary, PRICE may subcontract to a local research entity to conduct wide-scale surveys for this performance monitoring plan. Because of the huge size of surveys required at the end

of each year, PRICE hires third party professional survey teams. These third party survey teams ensure the integrity of data to some extent as they are not involved in the project. M&E selects the surveyors from a pool of candidates, given the required qualification of a surveyor.

### **Data Entry**

For the data collected on enterprise performance in each quarter on the first three indicators, the respective Sector team performs initial data entry in the soft copy of the Enterprise data format (in Excel). This is later checked by M&E and confirmed for final submission. M&E then enters the data into the M&E database.

For the sample surveys conducted, appropriate format for data entry is required. Format for data entry is prepared by M&E. Easy to use MS Excel format is being used. For the small quarterly surveys of sample size 30, data entry is usually done by the respective Sector Team (or in some cases, the M&E Specialist) who have collected data. For the bigger surveys conducted by hired survey teams, data entry is done by the hired professional data entry operator. These third party survey teams provide data in soft copy as well as the hard copies of filled out formats.

### **h. Quality Control**

#### **Data Quality Analysis**

M&E Team conducts visits to some sources of data to verify the collected data. These are random verifications and conducted without prior notice. Data verification is also done over telephone with the partner or beneficiary. M&E team talk to the partner or beneficiary and in this way, check back with the data already at hand. If any discrepancy is observed, it is consulted with the technical team before correction. At least 10% data verification is done as advised by USAID. If required, M&E team takes help from the technical teams for verification. After verification is completed, M&E signs on the data formats.

After that, the PRICE technical team provides initial quality control for the various raw data elements. Sector team examines the data to identify common errors including logical inconsistencies, out-of-range values, significant departures from trends, or other errors so that they can be immediately addressed.

The project M&E is responsible for data quality control after data entry. Around 10 percent of the tabulated data is compared with the raw data forms to ensure accuracy of data entry. M&E then perform basic data analysis and tabulation to identify potential erroneous data. When errors are identified early, M&E make appropriate corrections by coordinating and consulting with counterparts as appropriate.

As some indicators' information is collected from the training reports, the data quality of training report is also important. To ensure that quality, the Training Specialist conducts visits to the ongoing training sessions, consults with the partners and beneficiaries, checks the quality of training administration etc. and provides on-spot recommendations. S/he also gives the feedback to respective Sector team.

## Data Quality Criteria

Five related standards are used to examine data quality in more depth<sup>5</sup>.

### Criteria for Good Data Quality

1. Validity
2. Precision
3. Reliability
4. Timeliness
5. Integrity

(1) Validity. An indicator should clearly and adequately represent the intended result.

- Attribution. Does the indicator measure the contribution of the project?
- Bias and/or Sampling Errors. Are there any biases or sampling errors that affect the data?

(2) Precision. Data should be sufficiently precise to present a fair picture of performance and enable management decision-making at the appropriate levels. Also, there should be a sufficient degree of confidence in the data's accuracy.

(3) Reliability. Data should reflect stable and consistent data collection processes and analysis methods over time, so that changes in data are not due to changes in the data collection method.

In other words, if the data collection procedure were repeated, the same result should occur.

(4) Timeliness. Data should be timely enough to influence management decision-making. There are two key aspects of timeliness. First, data must be available frequently enough to influence decision-making. Second, data should be current enough when available.

(5) Integrity. Data that are collected, analyzed, and reported should have established mechanisms in place to reduce manipulation. There are generally two types of issues that affect data integrity.

The first is inaccurate transcription. For example, a number might be incorrectly entered into a database system or recorded in a performance report. Data integrity is at greatest risk of being compromised during collection and analysis. The second, and more complex issue, is whether there is any incentive on the part of the data source to manipulate the data. For example, if a project obtains data from stakeholders who depend on funding from the project, the stakeholder may have an incentive to skew data.

## Data Quality Analysis (DQA) by USAID

USAID conducts annual DQA visits to PRICE project areas and meets partners, stakeholders, consultants. The team discusses with the partners, beneficiaries and also check on some required documents on the spot. USAID also meets PRICE personnel for this and discusses the whole data collection, quality control and reporting process in detail. Based on that, USAID prepares its annual DQA report for the project.

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<sup>5</sup> Definitions are derived from USAID Programming Policy, ADS Chapter 203 Assessing and Learning, p. 20.

## Potential for Double Counting

PRICE works to minimize potential double counting through close coordination between sectors and technical teams. The project M&E reviews indicators with each team and identify areas where overlapping between sectors may occur. Once identified, the teams work together to determine how the data will be monitored and reported.

Double counting may also occur between PRICE and other USAID projects operating under SO 12. The M&E will identify these situations and work with partner projects to determine if the results may be better reported through one or the other project. However in some situations, it may be appropriate for both projects to monitor the same data. In these cases, the project may still monitor and report on the data but will report the magnitude of potential overlaps. With this information, USAID is able to adjust for double counting when consolidating indicators from various partners.

### i. Data Analysis

After ensuring data quality, the data is processed and analyzed by the PRICE M&E. MS Excel program has been used for the processing and analysis of data so far. For the three custom indicators (increase in sales, creation of jobs and increase in investment), separate processing techniques are used for data collected from enterprises directly (by using Enterprise Data Format) and the data collected from the combined body of beneficiaries, i.e. associations or cooperatives (by using sample survey method and format). Data from sample surveys is extrapolated for getting the figure for the whole populations (taking cultivable land area as the basis). PRICE has a plan to establish a software for data entry and analysis of the collected data.

However, the process of measurement of performance is same for both: comparing performance period results with the baseline period data. The performance period data is compared with the same period in baseline and the resulting change is taken as performance. For example, while calculating quarterly increase in sales (custom indicator 1) of a partner, the gross sales of the partner in that particular quarter is compared with the baseline sales of the partner in the same quarter in the baseline year. That means:

**Increase in Sales in the quarter = Value of Sales in the quarter – Value of Baseline Sales in the same quarter**

For the second indicator, ‘**Total number of full-time jobs created**’, the creation of jobs are considered across the value chain/s, wherever applicable. For the jobs created directly by the partners (only one node in a value chain), data is collected from the partners. Performance calculation from this data is as stated above: performance period data is compared with the same period in baseline and the resulting change is taken as performance.

For estimating the additional jobs created downstream or upstream or on-farm as a result of partner activities, PRICE has drafted a Job Model (with the help of a short term consultant supervised by DCOP) by September 2010. The Job Model estimates Job Factors for different type of partners (enterprise, group of farmers) in several parts: downstream, upstream and on-farm.

The downstream Job Factor gives the factor by which additional labor days are used by a partner for each additional unit of production in a period. The total quantity of increased production of a partner in a period is multiplied by the respective job factor and the resulting full time equivalent job is calculated. For example, if partner A has increased its production by 500 MT in a period and partner A's downstream job factor is 5 (labor days per MT of production), the resulting full time equivalent job created downstream is:  $(500 \times 5) / 150 = 16.67$ . With the accumulated data at hand till September 2010, the downstream job factor has been used to calculate additional jobs created by the enterprises and farmer groups till September 2010 and reported in the annual report of FY 2010. For Oct-Dec 2010 and Jan-Mar 2011 quarter also, downstream job ratio has been used in the same way and it will be continued in next quarters.

The Job Model also helps to estimate the on-farm job factors created by the farmer groups because in Bangladesh scenario, a major part of the labor used in agriculture is family labors for which farmers don't keep records. The on-farm job factor in the Job Model calculates the total on-farm labor requirement factors of different partners which may include hired and/or family labor. For the accumulated data at hand till September 2010, on-farm job factor has been used to calculate additional jobs created by the farmer groups and reported in the annual report of FY 2010. However, this first draft of the Job Model will be strengthened more.

In each sector, all the partners' performances are summed up for getting the aggregate performance on the 3 indicators for the sector. Then the three sectors' performances are summed up to get the project performance.

While analyzing the data, M&E focuses on the segregation required by the definition of an indicator, i.e. by sector, age, region, export-import etc. After that, the quantitative achievements are linked back to the qualitative improvements by the partners. Qualitative results are collected through regular M&E activities as well as sector activity reports. M&E takes the consent of technical team before establishing such relationship in the analyses.

#### **Attribution:**

Obviously PRICE alone is not attributable for the total improvement observed by the partners. However, considering the difficulty in isolating attribution for agro sector where there are a multitude of variables that are impossible to control or easily predict (such as weather and commodity prices), this report simply takes PRICE as one of the attributable factors behind the improvement. Any possible overestimation will be offset by the multiplier effect of the project which PRICE does not measure as performance.

#### **j. Data Management Software**

The existing PRICE M&E Database is designed to follow the development of appropriate recording and reporting formats and data collection tools that are consistent with the indicators and information need systems and M&E plans. Project reporting requirements have determined the type of data management, processing, analyses and reporting. Though the present system uses MS Excel application for data processing and reporting, still it takes considerable time and this situation is supposed to worsen with the higher scale of the project. Thus an automated M&E Data Management System or software that captures outputs and outcome indicators using a common user-friendly software package will be developed. This will add flexibility, efficiency to and enhance reliability of the PRICE M&E system. PRICE



has already developed the Scope of Work for this and collected proposals for the task which are under review.

Relational database structure will be used to develop the Data Management System for PRICE. This structure will allow automatic navigation in the database and support query facilities. Expected design will include module creation, ID creation, data analyses, upload and download options etc. Around 15 users will access the system and able to see the reports. Access to the System should be secured by password. 4 of these users will have access for data entry (but not uploading) to the system modules. Only M&E Manager will have administrative access to the system.

PRICE already signed an agreement with Grameen Solutions Ltd., a renowned software company in Bangladesh, to establish the system. The system is expected to be live in July 2011.



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## **Annex 3**

### **Case Study Examples**



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## GHERS Initiative Brings New Dimension to Shrimp Farming

**PRICE promotes new shrimp culture techniques through the GHERS initiative for quality shrimp production and income generation**



Lutfar Sardar at his gher

*"I am quite amazed with the production from my gher after the MTT training I availed with PRICE support. Now I have a consistent income with profit and no loss. I can even bear the educational expense of my children," says Lutfar Sardar, shrimp farmer of Village- Kherol, Upazilla- Koyera of Khulna district*

Mr. Lutfar Sardar is a self-motivated shrimp farmer from the - Kherol village, Koyera Upazilla- of Khulna district in the southwest of Bangladesh. He has been involved in shrimp farming since 1990, following traditional techniques on 0.60 hectares of his own land. Due to a lack of knowledge about good farming techniques, he used to harvest minimum yields, and his profit margin was either very poor or even negative.

Lutfar's livelihood depends on shrimp farming,, but he was unable to generate enough income to support household expenses and the educational expenses of his children. Sometimes he even had to borrow money from his neighbors to get by.

In 2009, Lutfar decided to join Greater Harvest and Economic Returns from Shrimp (GHERS) initiative through PRICE's work with WorldFish Center, and learned about Modified Traditional Technology (MTT) farming through farmer group meetings. MTT, techniques are affordable and manageable for the small scale farmers. Through this training Lutfar learned that to have good production and quality shrimp her must properly stock shrimp to the optimum density, test and maintain water quality, regularly feed and check the shrimps' health where as in traditional culture practices he was ignorant about all these. Previously he did not adequately prepare his pond, stocked too many shrimp, and did not maintain his water or feed his shrimp correctly, which caused diseases in shrimp - especially viral diseases - leading to less than optimal production.

=By employing traditional culture systems practices, he could only produce a maximum of 150-180 kg shrimp/hectare/year, but after receiving MTT training and changing his practices, he now harvests more than 205 kg shrimp from his 0.60 hectare pond, valued at BDT 103,000. He also harvested 200 kg whitefish from the same pond, which are worth BDT 30,000, and still expects to harvest more than 150 kg shrimp, 350 kg whitefish, and 90 kg prawn, which will be a total value of BDT 150,000 in one season.

Lutfar, with profit from his business is now able to afford all his household expenses and bare educational expenses of his children. He shares his experiences with his neighboring farmers and even with those outside his village. As a result, surrounding farmers have already decided that they will apply MTT technology to their shrimp farming.

Photo: WFC



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## Nurturing leather sector SMEs to create competent subcontractors for lead firms

**PRICE enables SMEs in the leather products sector to eliminate inefficiencies by improving production techniques**



Participants at the Seminar

Photo: PRICE / USAID

### CHALLENGE

Leather products small and micro-enterprises (SMEs) have limited access to information about technology, the market, and better business practices needed to become more successful. Most SMEs run inefficiently and are not aware of best practices to reduce these inefficiencies. Efficient production processes include manipulation and use of raw materials, appropriate operational flow of production processes, maintaining an inventory, housekeeping, and increasing workers' skills and motivation. These are necessary to improve productivity, and maintain quality standard of products and cost effectiveness.

### INITIATIVE

PRICE is committed to supporting SMEs to help them improve their processes, and as a result, achieve growth. As a part of that commitment, PRICE has partnered with seven enterprises to participate in a pilot program called "Process Up Gradation." The aim of this pilot program was to demonstrate to sector stakeholders through trainings implementation and follow up, particularly SMEs, how to become more competent in their businesses by reducing inefficiencies in their production processes in areas including costing, manipulations, inventory, and sequences of production operations. This was achieved through trainings, workshops, etc.

### RESULTS

The pilot initiative enabled the SMEs to eliminate some inefficiency from their operations. Specific changes are marked by cost savings and increased production. PRICE also supports the initiative by disseminating the experiences learned through the pilot program with other stakeholders to enable a wider audience to adopt best practices. For example, PRICE organized a seminar on better production techniques and has helped establish networking environment among the SMEs and the lead farms. The seminar provided a unique opportunity for the SMEs directly interact with the lead industries in the leather sector, and with some banks to share their concerns. The participating SMEs shared their experiences and raised some critical issues, which were addressed by the industry experts. By directly speaking with industry experts, SMEs were able to learn practical solutions to problems that were hindering their production processes. The industry experts noted that the seminar was a timely initiative as the Bangladesh leather sector is rapidly growing, and that these kinds of initiatives will help new SMEs to come forward, and increase the competitiveness of the overall sector.



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## PRICE Facilitates Initial Potato Export to TESCO, Malaysia

### PRICE supports potato export to renowned retail chain TESCO Malaysia in reefer container from Bangladesh



Photo: GUKED

Potatoes sorted, graded, packed and ready to be exported to TESCO, Malaysia

*Working intensely with a group of 1,500 Gram Unnayan Kendra Enterprise Development (GUKED) contract farmers and Golden Harvest Agro Industries, PRICE helped to successfully close the initial export order of 300 metric tons of quality potatoes to the Malaysian subsidiary of the British retail giant, TESCO.*

PRICE worked intensely with a group of 1,500 contract farmers from Gram Unnayan Karma Enterprise Development (GUKED) and Golden Harvest Agro Industries to successfully close the initial export of quality potatoes to the Malaysian subsidiary of the British retail giant, TESCO.

PRICE promotes contract farming for growing potatoes, the leading vegetable crop of Bangladesh. To support this initiative, PRICE worked with (GUKED) to increase its contract farmers' knowledge and skills of improved practices in production, harvesting and post-harvest handling of potatoes. At the same time, PRICE promoted the year round-demand for quality vegetables through its partnership with Golden Harvest Agro Industries Ltd., a firm that processes agricultural products for export and for sale in the local market.

Bangladesh occasionally exports potatoes to Malaysia and Singapore, but up until recently they had been of poor quality and were not fit to sell in large chain supermarkets like TESCO. Last year, however, PRICE learned of TESCO's interest in importing quality potatoes from Bangladesh. PRICE seized upon the opportunity and helped establish linkages among the three organizations: TESCO, Golden Harvest and GUKED to further explore the potential venture. TESCO indicated that the quality and the traceability of the potato were their major concerns. To ensure that these concerns were addressed, in January 2010, a TESCO auditor was taken to visit the fields of GUKED contract farmers in Chaok Volata village of Shibganj Upazila, Bogra, where he had the opportunity to speak with the farmers, and observe the production process, measures taken to produce disease-free quality potato, harvesting methods, and the grading, sorting and packaging processes.

After growing confident in the traceability and quality of the potatoes, and their grading, sorting and packaging standards, TESCO accepted the product and approved Golden Harvest as their supplier. In January 2011, TESCO, through its chain outlet in Malaysia, placed a purchase order for 300 metric tons of Granola variety potatoes from GUKED contract farmers, through Golden Harvest. The first consignment, 30 metric tons, was sent on March 10, and an additional 23 metric tons were sent on March 20 in a refrigerated container. The consignments have already reached Malaysia and TESCO accepted the delivery with 100 percent satisfaction, zero major defects, and only 0.18% minor defects. Throughout the process, PRICE provided



technical assistance to the contract farmers of GUKED to grow quality grade potatoes, and adhere to high sorting, grading and packaging standards; helped Golden Harvest understand and comply with international standards for exporting potatoes to the foreign market; and most importantly, facilitated the connection / communication between TESCO and the two parties for final export of the product. PRICE was the catalyst among the three stakeholders – GUKED contract farmers, Golden Harvest Agro-industries and TESCO – to accomplish the initial export of high quality potato to a world class chain super shop from Bangladesh.